

# **Neighborhood Change and Economic Opportunity in Memphis: Implications for Memphis 3.0**

Technical Report

April 4, 2018

*prepared for:*  
City of Memphis



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# I. INTRODUCTION

The City of Memphis is in the process of updating its comprehensive land use plan for the first time in four decades (Memphis 3.0). As part of the planning process, the City has already conducted significant background analysis and public outreach, and developed the following vision statement for the Plan:

IN OUR THIRD CENTURY, MEMPHIS WILL BUILD UP, NOT OUT.

Memphis will be a city that anchors growth on strengths of the core and neighborhoods; a city of greater connectivity and access; a city of opportunity for all.

The City is currently in the process of a district-planning process that will result in land use strategies and recommendations for each of 14 planning districts in Memphis. At the same time, City staff and consultants are also working to further refine the citywide goals and objectives that have already been developed through the planning process, and develop specific implementation strategies to achieve these objectives.

This technical report is intended to provide a framework for developing implementation strategies for Memphis 3.0 related to land use, neighborhood stabilization, economic and workforce development, and public-sector investments in infrastructure and business incentives. The report synthesizes findings from previous studies and provides original analysis focused on: the spatial distribution of household and jobs in Memphis, and how this distribution has changed over time; the forces driving residential, commercial, and industrial real estate investment (and disinvestment) within Memphis; and the implications of these trends for the economic opportunities available to Memphis residents.

## CONTENTS OF THE REPORT

Following this introduction, the report includes the following sections:

- **Chapter II** summarizes key findings and conclusions from the analysis.
- **Chapter III** describes the major eras of economic development and population growth in Memphis' history. This discussion is intended provide a framework for understanding the City's current physical environment and economic structure, as well as the origins of the racial and neighborhood disparities that exist in Memphis today.
- **Chapter IV** provides an analysis of the neighborhood/household change that occurred within the City of Memphis between 2000 and 2015. These changes drive the residential investment and disinvestment patterns discussed in the following chapter.
- **Chapter V** assesses the amount, type, and location of investment in residential structures occurring within the city, discusses the spatial patterns and causes of disinvestment (or "blight"), and describes the organizations and systems that are set up to deal with the consequences of disinvestment.
- **Chapter VI** analyzes historic and projected employment trends in Memphis. The analysis in this chapter sets the context for understanding both the employment and entrepreneurship opportunities that are available to Memphis residents, and the forces driving the City's commercial land use and investment patterns.
- **Chapter VII** describes the opportunities and barriers for Memphis' residents to access employment opportunities and start or expand small businesses, as well as the existing organizations and initiatives set up to support workforce development, entrepreneurship, and small business development.

- **Chapter VIII** analyzes the spatial location of jobs, existing employment land uses, and new commercial, industrial, and institutional investment within the City of Memphis. The chapter is organized by land use (industrial, office, medical and educational, retail, and accommodation), and also includes a section describing the role of tax incentives in attracting new jobs and real estate investment.
- **Chapter IX** provides an overview of Memphis' major infrastructure assets and needs from an economic development perspective, and describes where new public infrastructure investment is planned.

## II. SUMMARY OF KEY FINDINGS

This chapter synthesizes the key findings and conclusions stemming from the analysis conducted for this report, as well as from the many other background materials that were reviewed as part of this effort. The findings summarized below are discussed in more detail in subsequent chapters.

### NEIGHBORHOOD CHANGE AND RESIDENTIAL INVESTMENT

**Some neighborhoods within Memphis are attracting growth and investment, but many others are in decline.** Residential investment (in both existing and new units) and household growth are concentrated in Core City and north along the waterfront, as well as along the Poplar Avenue corridor into University and East. There is also some investment and household growth occurring at the city's eastern and southern edges, including in Cordova, Raleigh, Southeast, and Parkway Village. At the same time, many older neighborhoods have lost households over the course of many years, and are experiencing disinvestment in the form of abandoned, physically deteriorating, or "blighted" properties.

**Areas that are attracting new household growth and residential investment tend to be located in close proximity or have excellent access to job centers.** Among other amenities, these places tend to have excellent access to job centers, including office-based jobs in Core City (Downtown) and East (along Poplar Avenue), medical and educational jobs in the Medical District and Midtown, and/or transportation and logistics jobs in Parkway Village. In general, vehicle (e.g., freeway) access is a more important driver of residential investment than transit access. With the exception of Downtown and Poplar Avenue corridor, most neighborhoods and job centers have very limited transit access.

**One factor contributing to neighborhood reinvestment is the broad spectrum of investors who are building or renovating residential buildings.** These include:

- **Individual homeowners** who are buying and/or remodeling existing homes. These are relatively small-scale investments, and do not necessarily require access to significant amounts of capital, but in aggregate, people buying and/or renovating single-family houses are having a major positive impact in some neighborhoods. These small-scale investors are especially important because so much of Memphis' built environment consists of single family homes.
- **Private residential developers** who are building new homes and apartments, or renovating existing buildings for residential use (e.g., old apartment and office buildings in the Downtown).
- **Public-private partnerships or non-profit developers** building affordable or mixed-income housing. This includes HOPE VI developments, which involve the redevelopment of existing public housing as mixed-income communities, as well as other affordable and mixed-income housing.

**A variety of complicated market, economic, financial, and regulatory factors are contributing to neighborhood disinvestment.** Many of Memphis' historic neighborhoods have experienced significant outmigration of households to newly annexed suburban neighborhoods on the city's edge. These newer neighborhoods offer better proximity to the region's new job centers, more modern homes, and access to better schools. As households who have the financial resources to do so have moved to new neighborhoods, Memphis' household growth has been too slow to generate sufficient demand for the older houses in less desirable locations. As a result of this weak demand, property owners in certain neighborhoods who wish to sell (or rent) may not be able to find a willing buyer (or renter), and thus may not have an incentive to continue to pay property taxes or maintain their properties.

At the same time, high foreclosure and bankruptcy rates, low household incomes, and other factors have created a situation in which many households in Memphis struggle with financial instability. Property owners may either lack of the financial means or the incentive to adequately maintain their properties, pay property tax bills, or stay current on mortgage payments. Once a property owner falls behind on basic upkeep or even on their utility bills, physical deterioration can occur quickly.

Other factors that may contribute to neighborhood disinvestment include institutional owners (e.g., financial institutions that come into ownership as a result of homeowner foreclosure or bankruptcy) that do not have the financial incentive or systems in place to adequately maintain their properties. In some cases, land use regulations or building codes may also contribute to disinvestment; for example, this may occur when there are regulatory changes that create nonconforming uses, or in cases where the property owner perceives the cost of meeting basic building codes to exceed the value of making the required improvement.

**Much of the city's housing stock is in poor physical condition, particularly older rental units in lower-income neighborhoods.** Some properties are so compromised that the cost of bringing them back to a habitable condition and paying off taxes and late fees far exceeds the value of the property. For these properties, demolition of the existing structure may be the only feasible alternative. In other cases, the unit may be habitable, but in such poor physical condition that residents suffer from health problems (e.g., lead exposure, or asthma related to mold), lack complete plumbing or kitchen facilities, and/or face high energy costs due to inefficient heating and cooling systems. Previous studies have estimated that approximately 10 percent of the city's housing units have either a moderate or a severe housing problem. Housing problems were most prevalent among rental units, with the greatest concentration of physical housing problems found in Frayser, South Memphis, the Lamar corridor, and Westwood.<sup>1</sup>

**The City, County, and other public and non-profit partners are actively exploring new strategies for addressing the problems associated with disinvestment, blight, and the poor condition of the housing stock.** Recent efforts including the establishment of the Blight Authority of Memphis in 2015; the creation of the Blight Elimination Charter and Blight Elimination Steering Team in 2015-2016; and the ongoing work around South Cypress Creek funded by the National Disaster Resilience Competition Grant. Memphis Light, Gas and Water (MLGW) currently has two programs to address residential energy efficiency. The Healthy Homes Partnership (a collaboration among healthcare providers, legal services experts, housing providers and advocates, and other interested parties) is working to address the health impacts of poor housing conditions.

**Depending on the land use and real estate market context, different strategies may be appropriate for returning vacant, abandoned, or tax delinquent properties to a productive use.** For example, some areas that are experiencing disinvestment are located near major employment centers, in proximity to a neighborhood anchor, or near other neighborhoods that are experiencing new investment. In these places, there may be short- or medium-term opportunities to assemble properties for redevelopment. Other areas with significant disinvestment are located far from employment centers, in flood plains, or in places with minimal infrastructure. In these locations, alternative strategies may be appropriate, such as dedicating properties to flood lots, nature lots, expanded single-family home lots, or community lots (e.g., school or church uses), or some other productive use that could eventually be converted back to housing, should there be sufficient demand in the long-term.

<sup>1</sup> City of Memphis Division of Housing & Community Development, FY 2014-2016 Consolidated Plan.

## **EMPLOYMENT, JOB ACCESS, AND COMMERCIAL INVESTMENT**

**Memphis' economy has historically been driven by production and trade.** Memphis' central location within the U.S. and excellent transportation connections have always been competitive advantages. The city initially developed as a hub for trade and processing of cotton, lumber and other agricultural products coming from the immediate region around Memphis. The industrial base grew up around the Port and railroads along the Mississippi River. As logistics and distribution became increasingly important to the economy, new industrial investment moved south and east, driven by a need for proximity to Memphis International Airport and highway access.

**Today, the Memphis economy is dominated by the transportation and warehousing sector, with additional specializations in health care, medical technology manufacturing, other selected manufacturing industries, and tourism.** For many decades, Shelby County has held a dominant position in the transportation and warehousing sector as compared to the U.S. and peer regions. However, in recent years, Indianapolis and Louisville have outpaced Shelby County's job growth in this sector. Memphis also has specializations in administrative and support services (e.g., business support, back office, and building services), specialized medicine, medical technology manufacturing, resource-intensive manufacturing and materials processing (e.g., paper manufacturing, grain and oilseed milling, wood products manufacturing, and food and beverage manufacturing), and tourism and entertainment.

**However, the city has struggled to diversify its economy by attracting knowledge-based jobs.** Compared to the U.S. and peer regions including Cincinnati, Indianapolis, Louisville, and Kansas City, Memphis has a relatively low percentage of jobs in professional services, information, finance, and management. These knowledge-based sectors are projected to drive economic growth nationally in the coming years. Some of the barriers for growing these sectors in Memphis include workforce preparedness; negative perceptions of crime; and limited passenger service to Memphis International Airport.

**The majority of the region's most common occupations pay a low median wage.** As of 2014, only 57 percent of Memphis workers earned at least \$15 an hour, compared to 70 percent of U.S. workers. These low wages in part reflect the relatively low educational attainment of Memphis residents, but they also reflect the types of jobs that growing industries in the region provide. Of the top 20 occupations in Shelby and Fayette Counties in 2016, fewer than half paid a median wage of \$30,000 or higher. Some of top jobs include: laborers and freight movers, retail salespersons, stock clerks and order fillers, truck drivers, cashiers, and food preparation workers. Low wages in turn contribute to neighborhood instability by making households more vulnerable to bankruptcy, foreclosure, eviction, and displacement, while also reducing the amount of discretionary income that households have to spend on local goods and services.

**Over the course of many decades, employment growth and commercial investment has increasingly moved south and east, resulting in dispersed employment patterns similar to Memphis' residential growth patterns.** Multiple factors have driven the dispersal of employment and commercial investment. For example, as the transportation and logistics sector became more important, industrial users relocated east and south to be closer to Memphis International Airport and major companies like FedEx. At the same time, office and retail tenants followed the higher income, more highly educated population east and south.

**As new employment space has been built at the fringes of the city and region, many older industrial and commercial buildings in Memphis' older neighborhoods are vacant or underutilized.** Some existing industrial and commercial buildings no longer meet the preferences of their original types of tenants. For example, fulfillment centers require significantly larger buildings with higher ceilings (approximately 18 feet) to accommodate new equipment; many older industrial buildings do not meet those

specifications. Developing new commercial and industrial buildings in greenfield locations is often cheaper than redeveloping or reusing existing commercial or industrial space and the new buildings can be built to current user specifications. As a result of all these factors, the vacancy rates for office, industrial, and retail space all exceed 10 percent, with much higher vacancy rates in many planning districts. There are also many vacant sites (for example in Core City and North) that were formerly occupied by manufacturing plants or other employment uses, some of which require expensive environmental remediation.

**The city's retail supply has grown faster than the population or than household incomes.** Between 2000 and 2017, the city's total retail inventory grew by an estimated 17 percent. In comparison, the population grew by one percent between 2000 and 2015, while median household incomes declined by more than twenty percent after adjusting for inflation. Some amount of new development is necessary to replace older strip malls and shopping centers, which may not meet the preferences of modern retailers (especially national chains). Overall, however, the city of Memphis has an estimated 82 square feet of retail per person<sup>2</sup> – compared to a national average of 23.5 square feet of retail per person, which is considered an oversupply.<sup>3</sup> Some of the older neighborhoods in the city that have the highest retail vacancy rates also have limited access to full-service grocery stores. At the same time, national trends are creating a more challenging environment for traditional brick-and-mortar retail stores, including conventional grocery stores. Given the oversupply of retail in many Memphis neighborhoods, the low incomes of Memphis households, and the challenges facing retailers nationally, creative solutions will be required to reuse or redevelop older, vacant retail space.

**The geographic dispersal of employment opportunities also creates accessibility challenges for workers.** While the Downtown and Poplar Avenue corridor are relatively well connected, other job centers have very limited transit access, as do most low-income neighborhoods. In addition, there are no transit connections to northern Mississippi – an increasingly important location for manufacturing, transportation, and logistics jobs.

**Facilitating reinvestment and intensification in existing employment districts could help make the city and the region more economically sustainable, but will require targeted efforts from private investors, public agencies, and other partners.** Increasing employment densities in the Downtown and other existing employment districts could help create a critical mass of activity to support the urban amenities that many office-based workers and employers prefer; facilitate an improved transit system; establish better connections between jobs and workers; and support the City's property tax base. Some districts (including Downtown, South Memphis, and the Edge) have already started to attract adaptive reuse projects that are transforming old warehouses and manufacturing plants into residential, office, and creative uses. However, reuse and redevelopment of sites and buildings in existing employment districts is generally costlier than new greenfield development, involving demolition or significant renovation, environmental remediation, site infrastructure and utilities improvements, and/or parcel assembly. Supporting this type of reinvestment will require coordinated effort on the part of the public sector, including implementing land use policies, targeting infrastructure investments, and deploying incentives in a strategic way.

<sup>2</sup> Calculation by Strategic Economics, based on retail inventory data from the CoStar group.

<sup>3</sup> The next two countries with the most retail space per capita are Canada and Australia, which have 16.4 and 11.1 square feet per person, respectively. CoStar estimates that the U.S. would need to shed about a billion square feet of retail space (or 10 percent of the current inventory) in order for supply to be more in line with demand. 1. Hayley Peterson, "There's One Major Thing Everyone Gets Wrong about Amazon and the US Retail Apocalypse," Business Insider Australia, July 23, 2017, <https://www.businessinsider.com.au/amazon-shouldnt-be-blamed-for-retail-apocalypse-2017-7>; Lauren Hepler, "Union Square Struggles with Retail Challenges," San Francisco Business Times, June 22, 2017, <https://www.bizjournals.com/sanfrancisco/news/2017/06/22/sf-strux-2017-unionsquare-retailing-real-estate.html>.

**While most of the region's economic development efforts are targeting recruitment and retention of large businesses, small businesses and entrepreneurs also play an important role in the Memphis economy.** Economic development organizations and business leaders have identified the need to create more opportunities for entrepreneurship in an effort to diversify the economy and create more equal access to opportunity for women and people of color. Small, locally owned businesses may also have the potential to anchor local commercial districts, and expand the availability of goods, services, and jobs in low-income communities. However, there are relatively few programs and funding sources available for small business owners and entrepreneurs in comparison with the resources allocated to the recruitment of larger firms, including the use of tax incentives (discussed below).

**Workforce development continues to be a critical need in Memphis.** The regional unemployment rate has decreased dramatically since the recession, but there are still certain groups facing high unemployment rates. The level of training that is expected for entry-level jobs in many sectors requires training and skills that go beyond a high school diploma. However, more than half of Memphians lack post-secondary education. Memphis has many existing nonprofits and educational institutions that assist job-seekers, but there are not always clear linkages among the programs, creating gaps in training. Moreover, job-seekers in the city are often unaware of the programs offered and/or unable to take full advantage of their services because of lack of access to transportation, lack of child care, or other challenges. Finally, while many traditional workforce programs focus on getting people into jobs, there is not as much support for workers once they are in their jobs.

## **PUBLIC INVESTMENT: INCENTIVES AND INFRASTRUCTURE**

**The City is moving towards a more strategic approach to targeting limited infrastructure resources.** Short-term City and regional infrastructure plans are focused on targeting limited resources to address critical needs in existing neighborhoods. This includes repaving existing streets, bridge maintenance, and bicycle and pedestrian improvements; refocusing on the maintenance of the existing sewer system, rather than continuing the historic pattern of outward expansion; and addressing flood risk by leveraging federal grant funds.

**Memphis' regional economic development entities frequently provide economic incentives to retain and recruit businesses, and to attract multifamily and commercial real estate investment.** Because the City does not maintain a comprehensive list of development projects, it is unclear what share of the projects currently in the development pipeline are receiving incentives. However, in the past five years, the two organizations that grant most of the tax incentives in Memphis – the Downtown Memphis Commission (DMC) and Economic Development Growth Engine for Memphis & Shelby County (EDGE) – provided an average of \$3.2 million and \$35.6 million a year, respectively, in payment in lieu of taxes (PILOT) incentives in Memphis. DMC can only grant PILOTs within the Parkways, and most of its projects are concentrated in Downtown. EDGE does not have a specific geographic focus, but its PILOTs tend to be focused in the industrial areas of Memphis. On average, each dollar of incentive leveraged an average of between \$6 and \$9 in total investment. These incentives are seen by local economic development practitioners as critical for business recruitment and (to a lesser extent) retention, both because of competition with neighboring states that offer more aggressive incentives, and because some development may not pencil without subsidy. At the same time, the incentives have a significant short-term cost. In 2013, the advocacy group Good Jobs First estimated that the annual cost of PILOTs to the City was \$42 million, or about 14 percent of the City's property tax base.<sup>4</sup>

<sup>4</sup> Estimate of the total cost of tax abatements to the City of Memphis; this figure does not account for whether the incentivized economic activity would have occurred in the absence of the PILOT. Source: Thomas Cafcas, Kasia Tarczynska, Philip Mattera, and Greg LeRoy, "Memphis Blues: How Corporate Property Tax Breaks and Stadium Subsidies are Sapping the City's Fiscal Strength," Good Jobs First, June 2014.

**Within the city, there are several places where multiple public and non-profit sector entities are dedicating significant resources to spur reinvestment.** Examples of places where efforts by multiple agencies are coinciding – either through formal collaboration, or more ad hoc partnerships – include:

- **The Pinch:** Redevelopment of this area, located immediately north of Downtown Memphis, has been supported by revenues from the Uptown tax increment financing (TIF) district that the Shelby County Community Redevelopment Agency (CRA) established in 2001 and subsequently expanded in late 2017. Currently, the state, city, and county are each planning to contribute millions of dollars in infrastructure investments to support St. Jude’s expansion in the Pinch district, including: \$12 million from the state budget, \$25 million from a city tourism development zone, and an expanded TIF district under consideration by the CRA.<sup>5</sup>
- **The Edge:** This formerly industrial area on the eastern edge of Downtown is emerging as a destination for the arts, eating, and drinking. The Memphis Medical District Collaborative (MMDC) has worked with the City on coordinating street repaving with streetscape improvements on Monroe Avenue, Marshall Avenue, and Manassas Street. Meanwhile, the Downtown Memphis Commission is supporting reinvestment in this area with grants and loans, including a storefront façade grant for the High Cotton Brewery Company and a PILOT for the planned Bakery Apartments project (the planned redevelopment of the historic Wonder Bread factory).
- **Broad Avenue:** After a decade of coordinated public and non-profit activities, this historic retail corridor is emerging as an eclectic arts district and has attracted significant development proposals. In 2006, the City and County convened the Broad Avenue Planning Initiative charrette process to develop a vision for the revitalization of this historic retail corridor. In 2010, the corridor was the subject of one of the first complete streets projects in the city, beginning with a community festival that featured temporary “pop-up” storefronts in vacant commercial buildings and the tactical alteration of the streetscape to include features of a complete street using inexpensive materials. These temporary improvements evolved to include permanent improvements such as protected bike lanes, a lowered speed limit, and the addition of landscaping along the sidewalks. In more recent years, EDGE has supported many of the small businesses on Broad Avenue with loans for building improvements. The Shelby County Community Redevelopment Agency recently approved a new TIF district (the Binghampton TIF district) that would leverage planned new development in the area to pay for a range of infrastructure improvements, public facilities, and community and economic development activities.
- **Airport City:** There is broad consensus within the Memphis region that continued investment in the region’s intermodal freight transportation system is critical to the continued success of the transportation and logistics industry cluster, and to the expansion of foreign exports from Memphis. Regional economic development stakeholders, led by the Greater Memphis Chamber of Commerce, completed a comprehensive master plan for the Memphis Aerotropolis Airport City (defined as the area within a 25-mile radius of the airport) to further strengthen this cluster. Although implementation of the Aerotropolis plan has been slow, the region’s Long Range Regional Transportation Plan (a fiscally constrained plan of action for the development of transportation projects over the next 25 years) includes hundreds of millions of dollars’ worth of projects to widen, reconfigure, and improve roadways and interchanges in this area. The industrial areas around the airport in Parkway Village have also received more tax incentives from EDGE than any other planning district.

<sup>5</sup> Kevin McKenzie, “Pinch infrastructure targeted to aid St. Jude expansion,” Commercial Appeal, December 8, 2016, <http://www.commercialappeal.com/story/money/business/development/2016/12/08/st-jude-lands-state-funds-expansion/95117950/>.

**Places that are receiving multiple types of investments generally have a strong non-profit champion or other clear constituency, but there are few formal partnerships in place to coordinate infrastructure investments, incentives, and placemaking efforts.** In general, infrastructure investment and incentive decisions are made by separate entities with limited coordination. The places that are receiving multiple types of investments tend have strong non-profit leadership (such as the Memphis Medical District Collaborative in the case of the Pinch and Edge districts, and the Broad Avenue Arts District and Binghampton Community Development Corporation on Broad Avenue) or other clear champions (e.g. Chamber of Commerce and major employers around the airport). However, a lack of coordination and planning makes it difficult to connect emerging nodes of activity and leverage investments to achieve broader policy goals.

### III. HISTORIC CONTEXT

Memphis's economic, political, and social history is critical to understanding existing conditions in the city. This history informs the city's current physical environment and economic structure, as well as the origins of the racial and neighborhood disparities that exist in Memphis today.

**Figure III-1** shows Memphis' population growth and city size between 1850 and 2015. The chart divides the city's history into several eras based on growth patterns.<sup>6</sup> This timeline is intended to capture the major eras of economic development and population growth and relate those eras to some of the events in Memphis' history, in order to provide a framework for understanding recent household and economic change occurring within the city. However, this simple timeline cannot capture the full complexities of the city's history. Additional information gathered from the district workshop process can help create a more comprehensive picture of the factors that have shaped the city, especially at the neighborhood level.

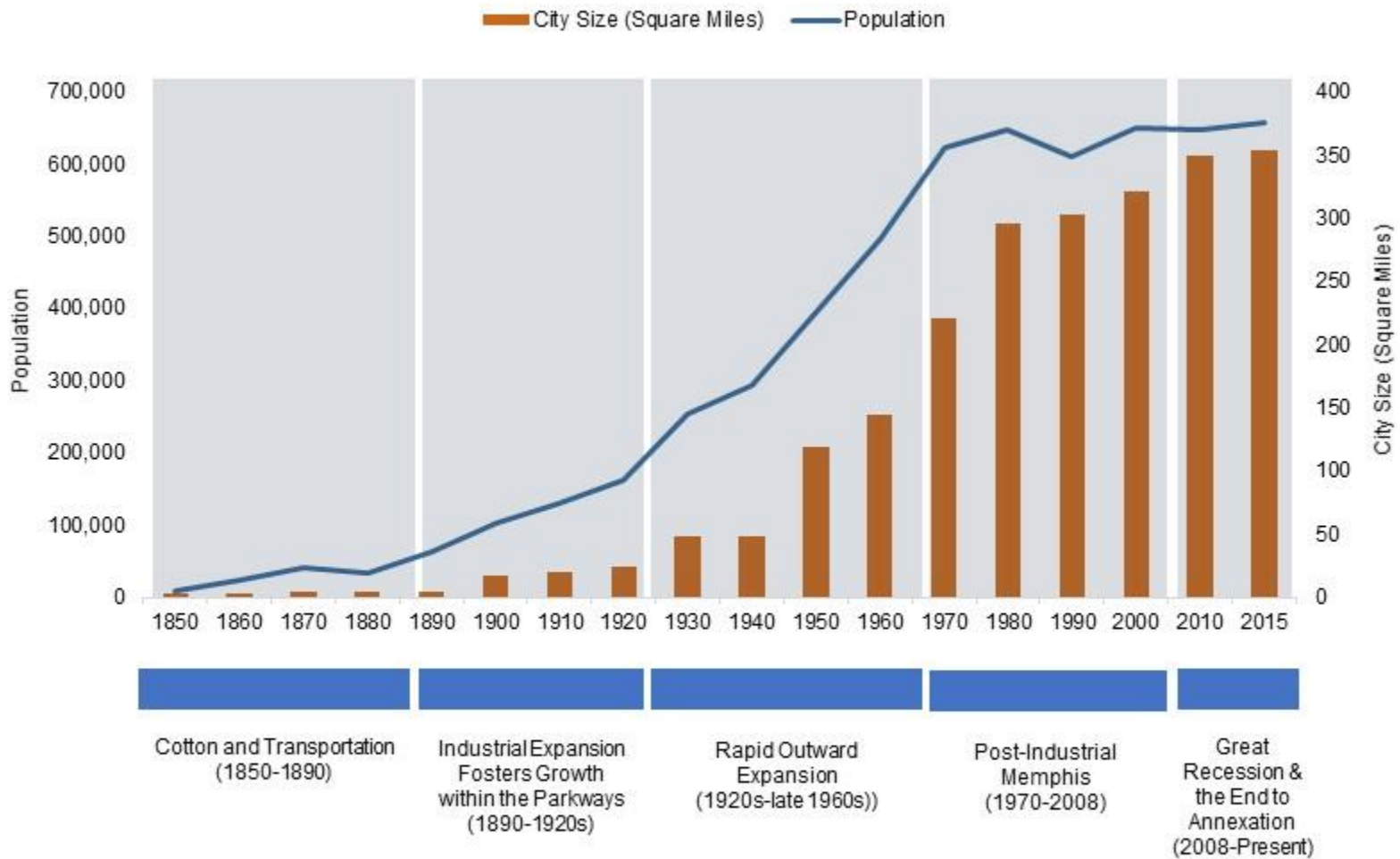
- **Cotton and Transportation (1850-1890):** During the mid to late 19<sup>th</sup> century, Memphis served as the major economic and political center for the upper Mississippi Valley. The key drivers for this economic activity were the region's large cotton plantations, the slave trade that supported the plantations, and the city's location on the Mississippi river. Transportation improvements in the 1850s through the 1880s, including the development of the interstate railroad system and the local streetcar system, helped consolidate the city's economic importance. The original grid of the city's downtown was also established during this period.

The Civil War had a major impact on Memphis, resulting in the migration into the city of thousands of black people fleeing plantations and farms. Another watershed moment during this period was the yellow fever epidemic in the 1878, which led to major declines in the city's population and tax base and helped contribute to the (temporary) repeal of the city's charter in 1879. Memphis also got its start as a major medical center during this period, with the establishment of one of the first hospitals for military veterans in the U.S.

- **Industrial Expansion Fosters Growth within the Parkways (1890-1920s):** Starting in the early 1890s, when the Great Mississippi bridge was built, Memphis consolidated its position as a regional powerhouse for production and trade by adding multiple factories for manufacturing wood products and continuing to expand the industrial base related to cotton processing. A large part of this success was due to the city's excellent transportation connections to the rest of the U.S, and the world. By 1920, Memphis also had one of the largest medical complexes in the country. Throughout this period, the city experienced steady population growth, largely within the boundaries defined by the original parkway system (bounded by East, North, and South Parkways). Neighborhood development during this period was generally characterized by a walkable street network focused around the streetcar system.

<sup>6</sup> The primary sources for the historic events referenced in the timeline include: Beverly G. Bond and Janann Sherman, *Memphis in Black and White*, The Making of America Series (United States: Arcadia Publishing, 2003); City of Memphis, "History Memphis," accessed December 1, 2017, <http://www.memphistn.gov/Visitors/Moving-to-Memphis/History-of-Memphis>.

**Figure III-1.** Population and City Size: City of Memphis, 1860-2015



Sources: U.S. Census, 1850-2010; U.S. American Community Survey 5-Year Estimates, 2011-2015; Shelby County, 2017; Strategic Economics, 2017.

- **Rapid Outward Expansion (1920s through late 1960s):** During this time, the city’s experienced significant employment growth, including industrial growth as represented by the opening of the Firestone Plant in 1936 (which at its peak in the late 1960s employed 3,000 workers).<sup>7</sup> St. Jude’s Children’s Research Hospital also opened during this period (in 1962). Robust employment growth drove population growth, including annexation of new suburban neighborhoods. As the city spread outward, new neighborhoods were increasingly built to be more auto-oriented, with large lots, cul-de-sacs, and neighborhood retail limited to shopping centers and major arterials.

The late 1950s also saw the beginning of urban renewal, resulting in the demolition of “slum” housing (and, in some cases, middle- or upper-income black neighborhoods and African-American cultural centers like Beale Street<sup>8</sup>) that was replaced with public housing, businesses, parking lots, or sometimes left vacant. Building on a long history of struggles for racial equity in Memphis, the Civil Rights movement also came to the forefront during this period with the fight for school desegregation, the sanitation workers strike, and the assassination of Dr. Martin Luther King, Jr. in 1969.

- **Post-Industrial Memphis (1970 through 2008):** Like many other cities in the U.S., Memphis saw a string of major manufacturing plant closings and a contraction of manufacturing employment beginning in the 1970s. While manufacturing remained an important part of the economy, new job growth was increasingly driven by other sectors. Most notably, the city emerged as a transportation and logistics hub, starting with the opening of FedEx near the Memphis International Airport in 1973.<sup>9</sup> As in previous eras, the city’s central location within the U.S. and transportation infrastructure continued to be key assets driving growth in the new transportation and logistics sector. However, with the shift away from river- and rail-based production and trade and towards air-based shipping, jobs began to shift away from the Mississippi River, the Port, and the railroads, to the airport in the city’s southeast. Employment in retail and the service sectors also increased rapidly during this period, with new office and retail space increasingly located to the south and east.

This shift in jobs and job locations was accompanied by changing neighborhood dynamics. Many older neighborhoods lost population and households, while growth continued to occur in the suburbs. Continued annexations of new suburban neighborhoods helped maintain the city’s population at around 650,000 people. In addition to economic factors, this pattern of outward expansion accompanied by disinvestment in existing neighborhoods was also related to complex social and political factors. Some of these factors include: the demolition of housing in the core due to urban renewal (which continued into the 1970s); City and County policies that facilitated suburban development and annexation by expanding urban services to new areas; and the departure of many white households to the suburbs in response to school and neighborhood desegregation.

At the same time, throughout this period, civic and community leaders began to set the stage for the revival of the city center, with historic preservation efforts, infrastructure projects like the development of the Downtown trolley system, and tourism and entertainment projects like Mud Island and the Pyramid, and the redevelopment of Beale Street and Stax. Beginning in the 1990s, the Memphis Housing Authority began to redevelop the city’s public housing as mixed-use HOPE VI developments, resulting in renewed interest in living in and around Downtown, but also the displacement of some of the original, low-income residents.

<sup>7</sup> Tennessee Department of Environment and Conservation, Division of Remediation, “Former Firestone Plant, Memphis, Tennessee,” [https://www.tn.gov/assets/entities/environment/attachments/rem\\_success\\_firestone-plant.pdf](https://www.tn.gov/assets/entities/environment/attachments/rem_success_firestone-plant.pdf).

<sup>8</sup> Preston Lauterbach, “Memphis Burning,” Places Journal, March 7, 2016, <https://doi.org/10.22269/160307>.

<sup>9</sup> FedEx, “Our Story,” <http://about.van.fedex.com/our-story/history-timeline/history/>, accessed December 5, 2017.

- **Great Recession & the End to Annexation (2008-Present):** The 2000s saw an acceleration of de-industrialization, culminating in the Great Recession (2008-2011) which caused major job losses in manufacturing and transportation and logistics, as well as in other sectors. While the overall Memphis economy has regained the jobs lost during the recession, the recovery was driven by the service sector (including health care, accommodation and food services, and administrative and support services). Transportation and logistics employment has grown since 2011, but total employment in this sector remains below pre-recession levels. At the same time, manufacturing employment has continued to decline.

The Great Recession also saw a dramatic slowdown in the pace of Memphis' outward growth. Since the end of the recession in 2011, local and state policy changes have made it much more difficult to continue the pattern of growth through annexations. However, even as annexations have slowed, Memphis' population has grown – reaching a high point of 657,000 in 2015. Much of the city's growth in recent years has occurred within the city's existing boundaries, as discussed in more detail in the following chapter.

As described above, over the course of the city's history, annexation has helped Memphis maintain its population, employment, and tax base by capturing regional growth within the city boundaries. However, one result is a large, thinly populated service area. Today, the city spans approximately 226,000 acres or 350 square miles, with an average population density of 1.1 households per acre. Just under 40 percent of the land area is occupied by residential uses; nearly the same proportion is vacant (**Figure III-2**).<sup>10</sup>

**Figure III-2. Estimated Land Area by Use: City of Memphis, 2015**

<b>Land Use</b>	<b>Percent of Total Land Area</b>
Residential	37%
Vacant Land*	36%
Civic/Institutional/Recreational**	9%
Industrial	8%
Commercial	7%
Unknown	3%
<b>Total</b>	<b>100%</b>

\*Includes properties classified as "vacant land" by the Shelby County Assessor (as reflected in the 2016 Bluff City Snapshot).

\*\*Includes recreation, common area land, and tax-exempt properties.

Sources: City of Memphis (Bluff City Snapshot), 2016; Strategic Economics, 2017.

<sup>10</sup> Based on Shelby County Assessor land use classifications (as reflected in the 2016 Bluff City snapshot).

## IV. RECENT HOUSEHOLD CHANGE

This chapter describes the household change that has occurred within Memphis since 2000 and provides a snapshot of household and demographic patterns within the city as of 2015. Household change in turn drives residential investment and disinvestment patterns, which are discussed in the following chapter.

Previous studies<sup>11</sup> have documented existing demographic conditions at the citywide, regional, planning district, and neighborhood (Census Tract or Block Group) level. This analysis builds on some of the key findings from previous studies about existing demographic conditions and adds a closer analysis of recent demographic and household change, focusing on how this change has played out at the Census Tract level between 2000 and 2015.

### RECENT HOUSEHOLD CHANGE WITHIN MEMPHIS

This section analyzes recent household change within Memphis, focusing on the period between the 2000 Census and the 2011-2015 American Community Survey.<sup>12</sup> **Figure IV-1** summarizes some of the key household changes at the citywide level. **Figure IV-2** shows the origins of households moving into Memphis in recent years. **Figures IV-3 through IV-6** provide maps of household changes at the Census Tract level. Key findings are discussed below.

**Despite recent gains in population, the number of households in Memphis declined slightly between 2000 and 2015.** The city's total population increased by about 7,000 people between 2000 and 2015, or 1 percent. However, the city lost 1,100 households during this time. While this represents a decline of less than 0.5 percent, it suggests that most of the city's population growth has taken the form of households increasing in size, rather than new households forming and driving demand for additional housing. Indeed, the average household size in the city increased during this period (**Figure IV-1**).

**However, within the city, some Census Tracts experienced significant household growth.** **Figure IV-3** shows overall household change by Census Tract between 2000 and 2015. Some neighborhoods attracted significant household growth, including in and around Downtown Memphis in Core City, Mud Island in North Memphis, and along the Poplar Avenue corridor in University and East. There was also household growth in new neighborhoods at the city's eastern and southern edges, including in Cordova, Raleigh, Southeast, and Parkway Village. At the same time, many older neighborhoods lost households during this period.

**Much of the household change in Memphis is related to households moving from one part of Memphis to another.** In the last five years, 72 percent of residents who moved into a housing unit in Memphis were moving within the city. Approximately 8 percent moved from elsewhere in Shelby County. About 20 percent moved from elsewhere within Tennessee or other parts of the U.S. (**Figure IV-2**). Many of the households moving into homes in Memphis are low-income, with a median income of less than \$25,000. However, it is important to note that because this move data is based on information from tax returns, it may not be directly comparable to household income data reported by the Census. (For example, many

<sup>11</sup> Including RCLCO, "Market Analysis for Memphis Comprehensive Plan," Prepared for City of Memphis, April 14, 2017; Tony L. Griffin et al, "Memphis NOW: A Predevelopment Phase for a Shared Vision and Strategic Agenda," October 2014; Opportunity, Connectivity, and Livability Maps produced by the City of Memphis, July 2017.

<sup>12</sup> Data for 2015 are from the American Community Survey (ACS) 5-Year Estimates, which are based on data collected during a 60-month period between 2011 and 2015. This data set is less current than the ACS 1- or 3-Year Estimates, but has a larger sample size, allowing for more precise analysis, especially at the Census Tract level.

households include individuals filing multiple separate tax returns; other households are not required to file income tax returns at all.)

**Households may move within Memphis to pursue new economic opportunities, because of household financial instability, or for other reasons.** Sometimes households move to be close to a new job or to upgrade housing units (e.g., from an apartment to a starter home, or from a starter home to a larger house). In other cases, households may move when they are displaced from their existing home, due to factors such as a rent increase, foreclosure, condemnation or demolition of a residential building, or other factors affecting household financial stability (for example, associated with a job loss or bankruptcy).

**Median household incomes increased in some Census Tracts, but most experienced a decline.** Citywide, the median household income in Memphis declined by 20 percent between 2000 and 2015, after adjusting for inflation.<sup>13</sup> The household income decline has affected people of color most significantly (**Figure IV-1**). Despite the general decline, however, some parts of the city still saw increases in median household income (**Figure IV-4**). It is important to note that many of the Census Tracts that have experienced income declines have continued to attract net household growth, suggesting that these areas are attracting new middle- or lower-income residents (**Figure IV-5**). In addition, some of the areas that have experienced income declines remain among the highest income neighborhoods in the city (see **Figure IV-9** below).

As discussed in Chapter VII, the low incomes in Memphis reflect many factors including high unemployment rates among certain groups, an economy that provides many low-wage jobs, and a workforce that (despite overall gains in educational attainment) is not well prepared for some higher-paying employment opportunities.

**The 2000 to 2015 period also saw a significant decline in homeownership – a key mechanism for building wealth – in most parts of the city.** The overall share of Memphis households who own their home declined from 56 percent in 2000, to 49 percent in 2015. The decline in homeownership was not uniform across the city; it was experienced primarily by black households (**Figure IV-1**), and in some Census Tracts more than others (**Figure IV-6**).

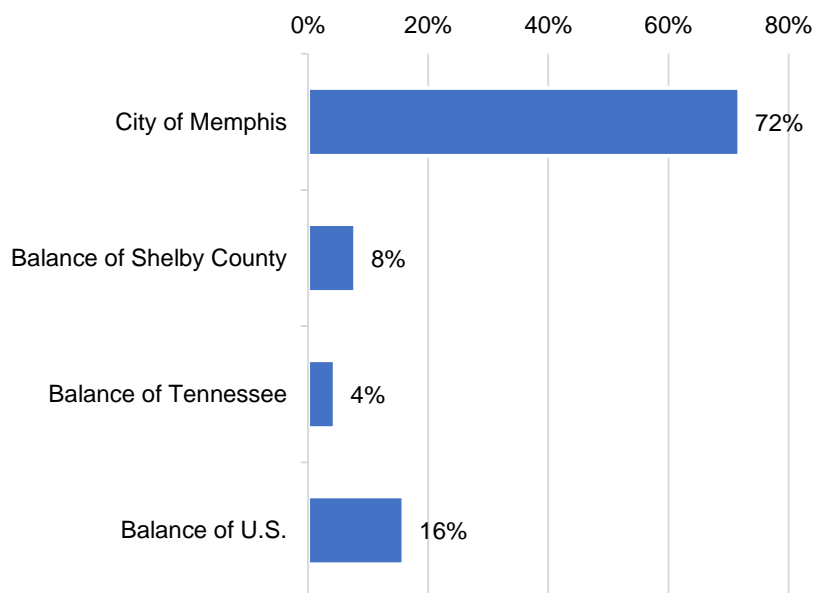
<sup>13</sup> As a point of comparison, the inflation-adjusted median household income for the U.S. declined by 10 percent during this time period, from \$59,900 in 2000 to \$53,900 in 2015.

**Figure IV-1.** Selected Household Change Indicators: City of Memphis, 2000-2015

	2000	2015	Percent Change
Population	650,100	657,167	1%
Households	250,907	249,775	-0.5%
City Size (Square Miles)	320	353	10%
City Size (Acres)	205,373	226,211	10%
Average Households per Acre	1.22	1.10	-10%
Average Household Size (Persons per Household)	2.52	2.57	2%
Median Household Income (in 2015 Dollars)			
Black or African American	\$38,307	\$29,449	-23%
White	\$58,792	\$55,818	-5%
Hispanic or Latino	\$49,211	\$31,010	-37%
Asian	\$59,200	\$56,700	-4%
Two or More Races	\$45,310	\$33,211	-27%
All Households	\$46,044	\$36,445	-21%
Percent of Households Who Owned their Home*			
All Households	56%	51%	
White	65%	66%	
Black	51%	44%	
Latino	24%	32%	
Asian or Pacific Islander	41%	49%	
People of color	50%	43%	

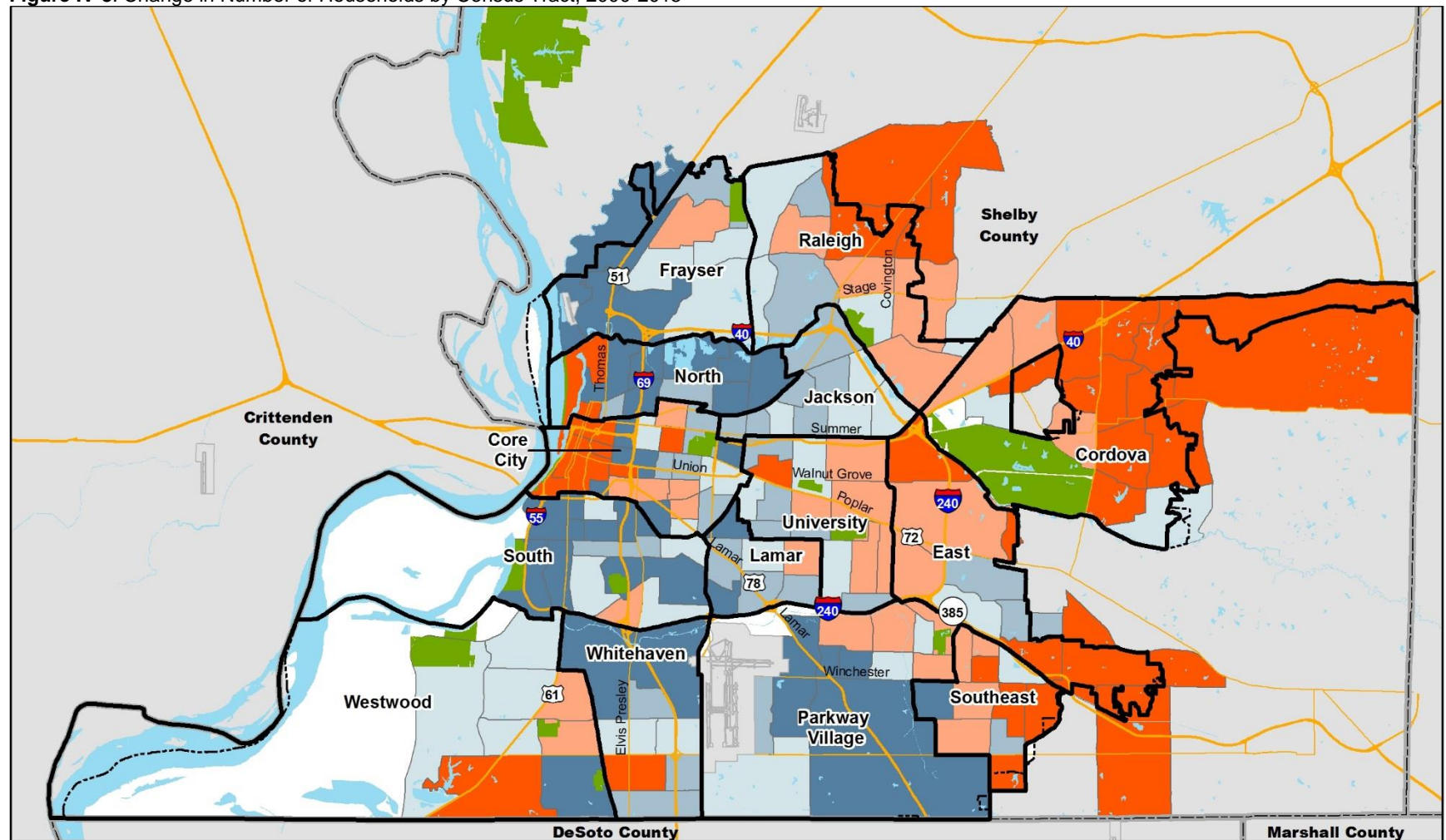
\*Homeownership data are for 2000-2014.

Sources: U.S. Decennial Census, 2000; American Community Survey 5-Year Estimates, 2011-2015; Social Explorer, 2017; IPUMS, 2014; PolicyLink/PERE National Equity Atlas, [www.nationalequityatlas.org](http://www.nationalequityatlas.org). Strategic Economics, 2017.

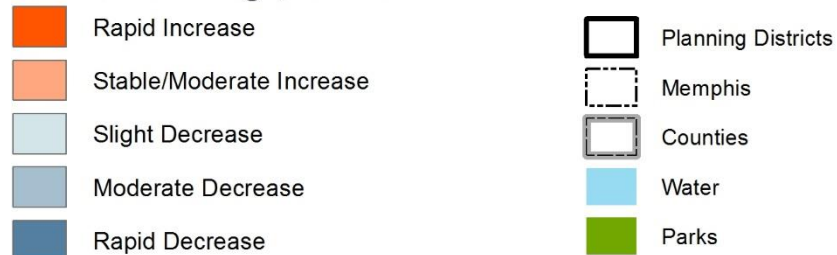
**Figure IV-2.** Origin of Population Moving into a Dwelling Unit in the City of Memphis, 2010-2016

Sources: American Community Survey 1-Year Estimates; Zimmerman/Volk Associates, Inc.

**Figure IV-3. Change in Number of Households by Census Tract, 2000-2015**



### Household Change, 2000-2015

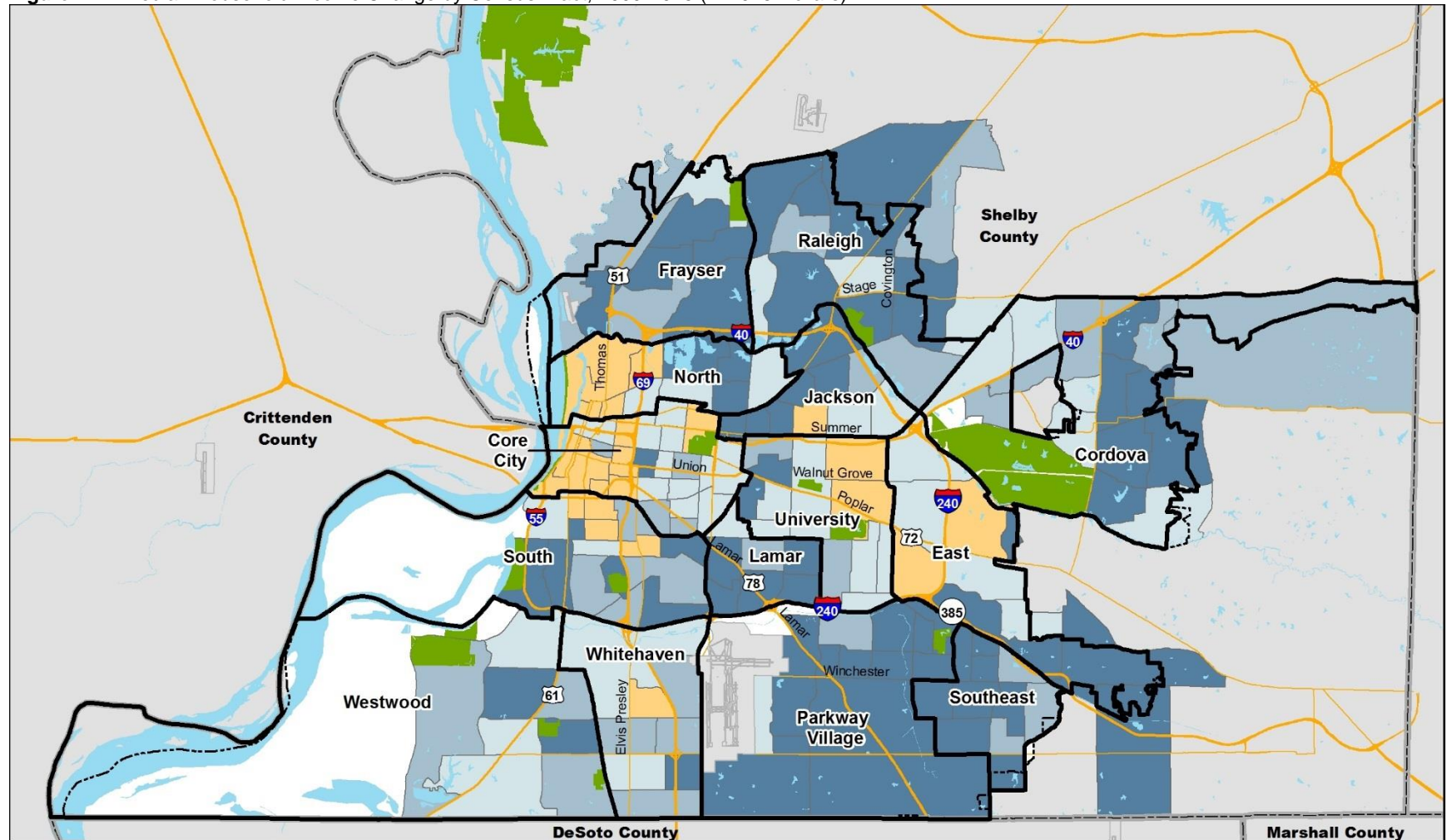


Census tract categories represent five equal intervals (quintiles) of household change. Rapid Decrease (greater than -24% change in number of households); Moderate Decrease (-24% to -10%); Slight Decrease (-10% to -4%); Stable/Moderate Increase (-4% to 5%); Rapid Increase (5% to 314%).

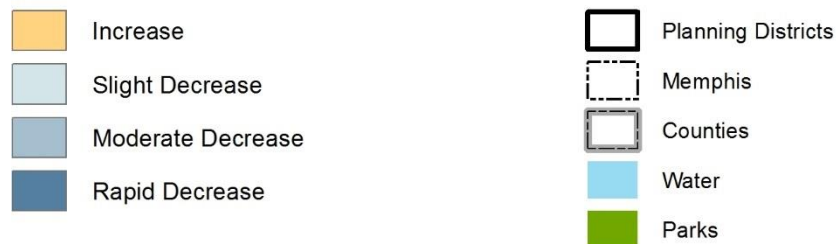
Sources: U.S. Census, 2000; American Community Survey 5-Year Estimates, 2011-2015; US2010 Longitudinal Tract Data Base; Social Explorer; Strategic Economics, 2017.



**Figure IV-4. Median Household Income Change by Census Tract, 2000-2015 (In 2015 Dollars)**



### Median Household Income Change, 2000-2015

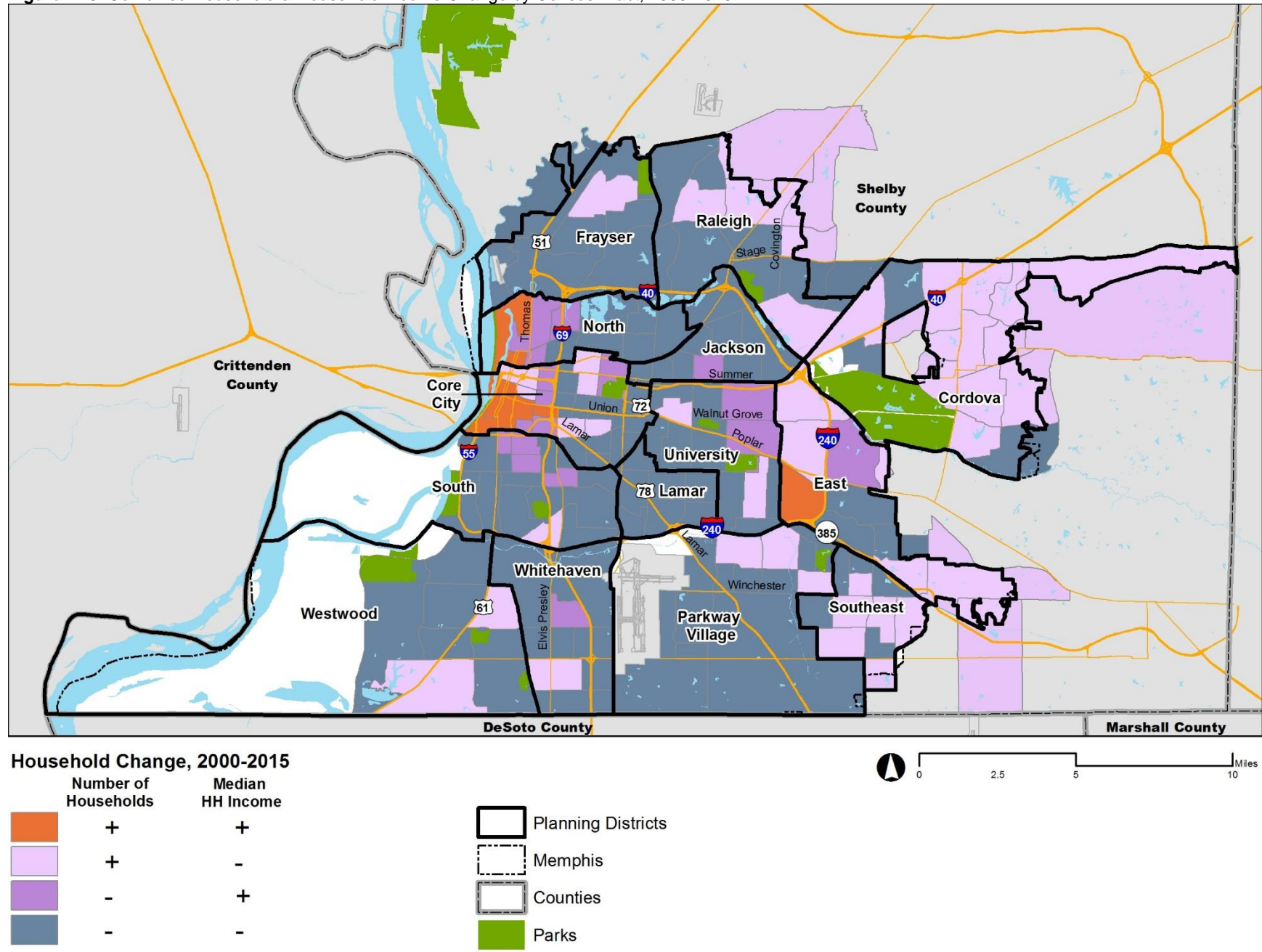


Census tract categories represent four intervals of household income change. Rapid Decrease (greater than -29% in median household income); Moderate Decrease (-29% to -21%); Slight Decrease (-21% to 0%); Increase (0% to 152%).

Sources: U.S. Census, 2000; American Community Survey 5-Year Estimates, 2011-2015; US2010 Longitudinal Tract Data Base; Social Explorer; Strategic Economics, 2017.

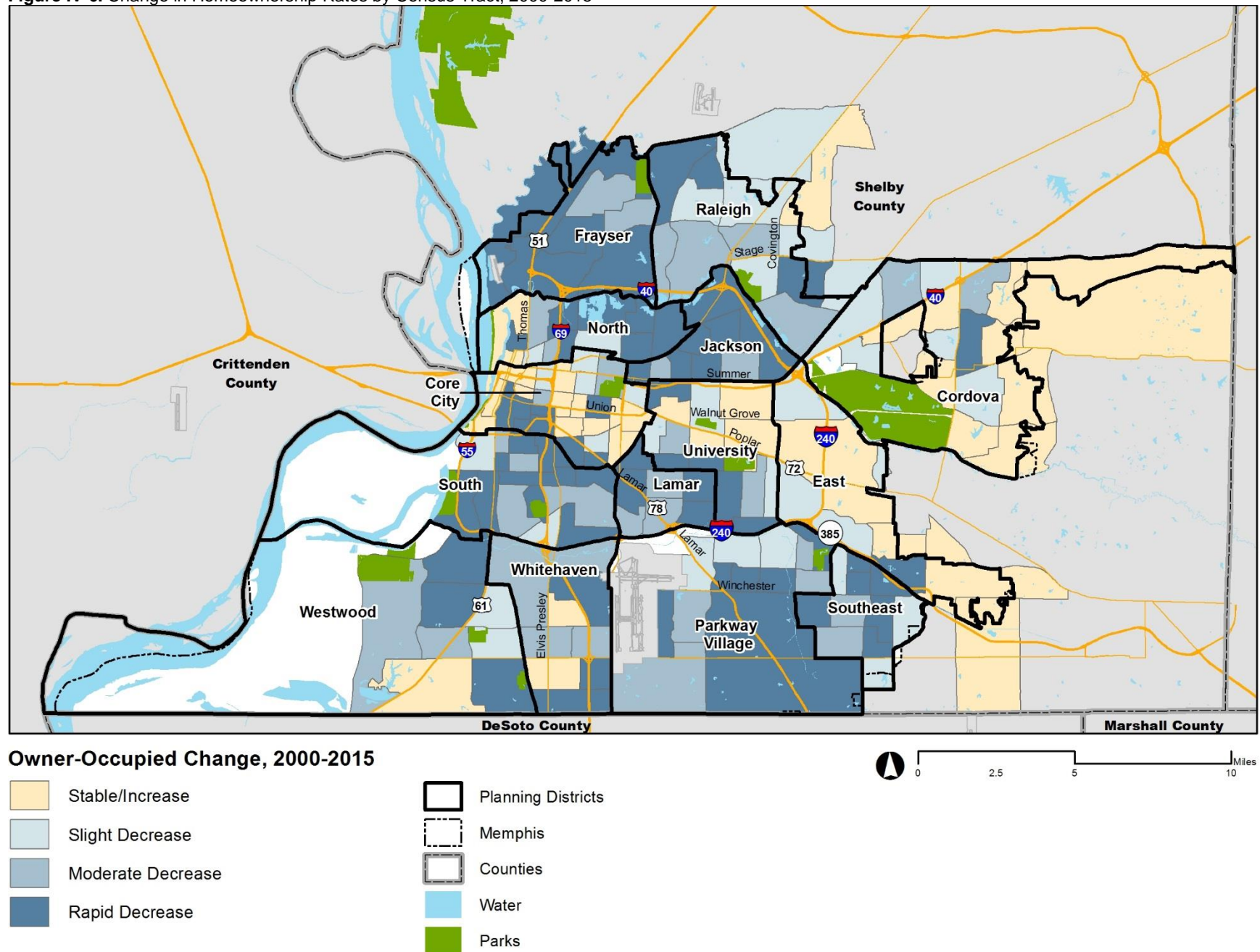


**Figure IV-5. Combined Household & Household Income Change by Census Tract, 2000-2015**



Sources: US2010 Brown University LTDB; U.S Census 2000; American Community Survey 5-Year Estimates 2015; Social Explorer; Strategic Economics, 2017.

**Figure IV-6. Change in Homeownership Rates by Census Tract, 2000-2015**



Census tract categories represent four intervals of homeownership change. Rapid Decrease (greater than -26% change in number of owner-occupied households); Moderate Decrease (-26% to -20%); Slight Decrease (-20% to -4%); Stable/Increase (-4% to 366%).

Sources: U.S. Census, 2000; American Community Survey 5-Year Estimates, 2011-2015; US2010 Longitudinal Tract Data Base; Social Explorer; Strategic Economics, 2017.



## SNAPSHOT OF MEMPHIS HOUSEHOLDS IN 2015

Memphis' long history of growth and development have led to the conditions that characterize the city today. The following figures show selected indicators of household and demographic patterns within the city as of 2015, including average household density (**Figure IV-7**), race and ethnicity (**Figure IV-8**), and median household income by Census Tract (**Figure IV-9**).

**While Memphis today is relatively low-density, it has pockets of higher-density areas.** In general, areas in and around Downtown and along the Poplar Avenue corridor remain somewhat higher density (**Figure IV-7**). As previous reports have noted, the highest-density areas are scattered throughout the city, making it more difficult to design an efficient transit system.<sup>14</sup>

**Memphis is segregated by race and income, but there are also many mixed-income, mixed-race Census Tracts.** These Census Tracts are scattered throughout the city, including both in eastern, more suburban districts as well as closer to the city core (**Figure IV-8** and **Figure IV-9**).

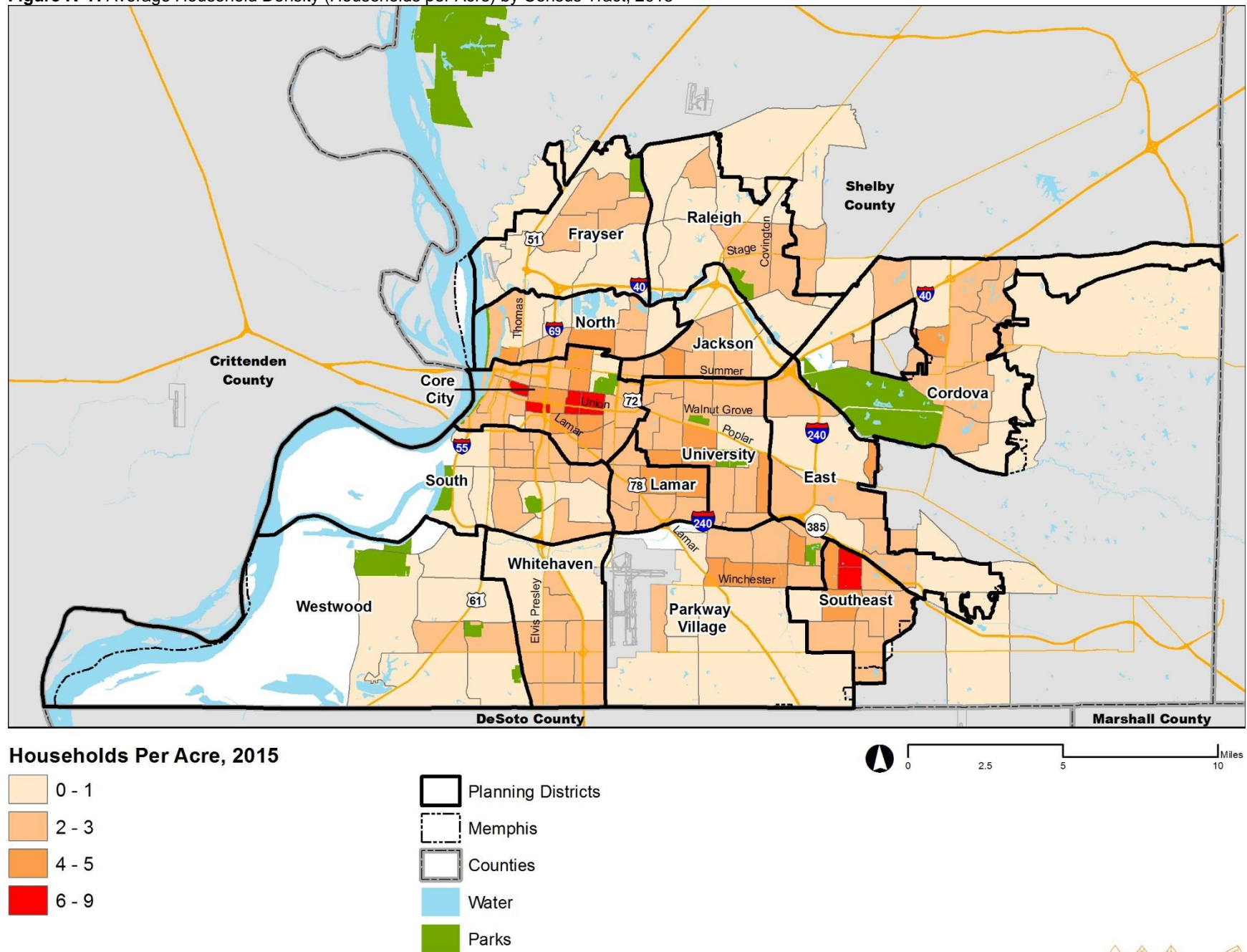
**Households in Memphis face high housing, transportation, and energy cost burdens.** Despite Memphis' relatively low housing costs, the average Memphis household is estimated to spend 26 percent of income on housing, and another 24 percent on transportation.<sup>15</sup> In some lower-income parts of the city, residents spend an additional 5 percent or more of income on energy costs.<sup>16</sup> These high cost burdens reflect the low incomes of many households; the dispersed land use patterns and limited transit network, which make most households reliant on automobiles for transportation; and the poor physical condition of many housing units, which leads to high energy costs due to inefficient heating and cooling.

<sup>14</sup> Jarrett Walker + Associates, *Memphis 3.0 Transit Vision Choices Report*, prepared for Innovate Memphis and the City of Memphis, September 25, 2017.

<sup>15</sup> CNT, "H+T Fact Sheet: Memphis, TN," <https://htaindex.cta.org>, accessed November 2017.

<sup>16</sup> Energy Burden map produced for Memphis 3.0 using data from Midsouth Regional Greenprint and ESRI.

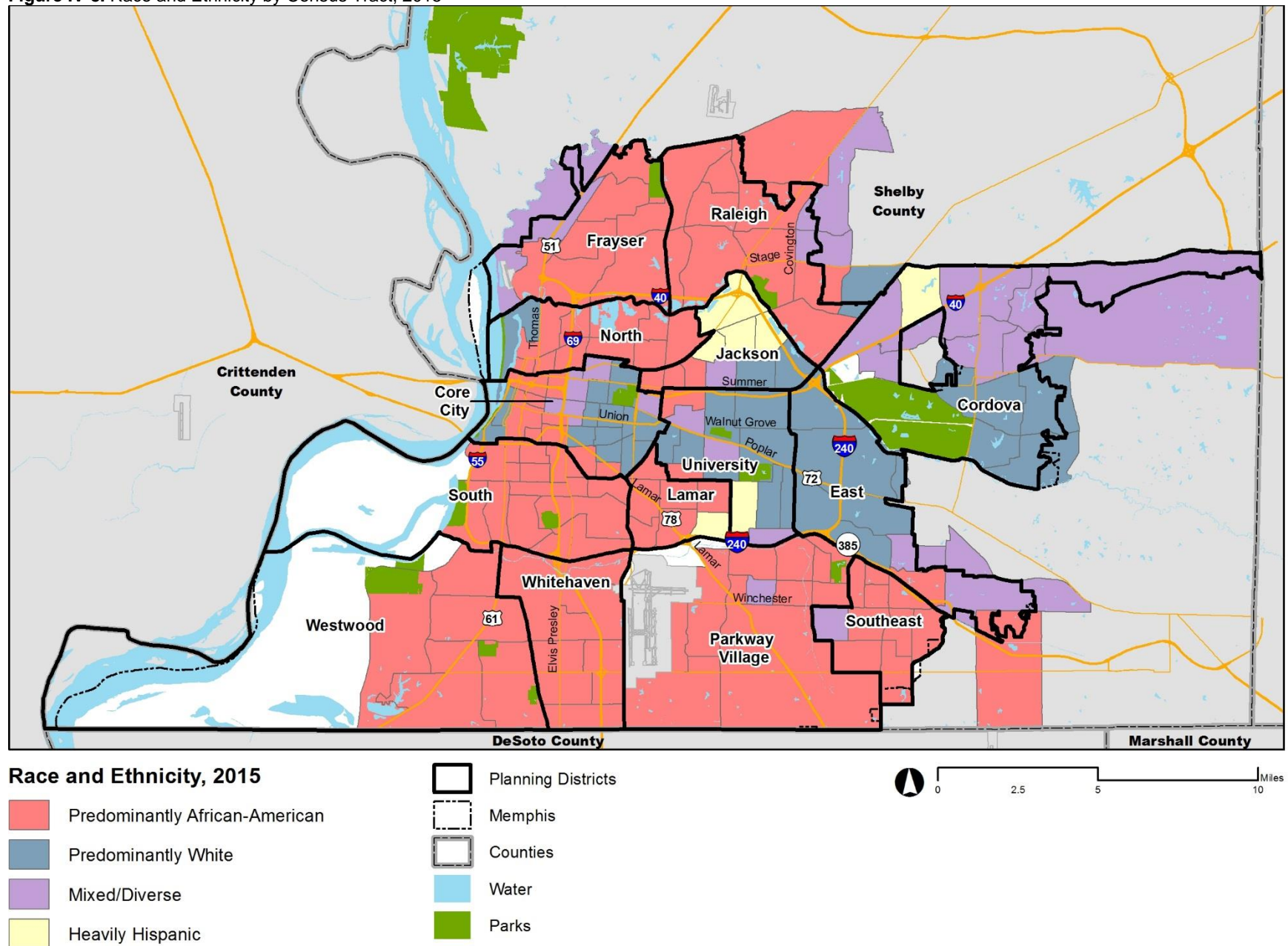
**Figure IV-7. Average Household Density (Households per Acre) by Census Tract, 2015**



Sources: American Community Survey 5-Year Estimates, 2011-2015; Social Explorer; Strategic Economics, 2017.



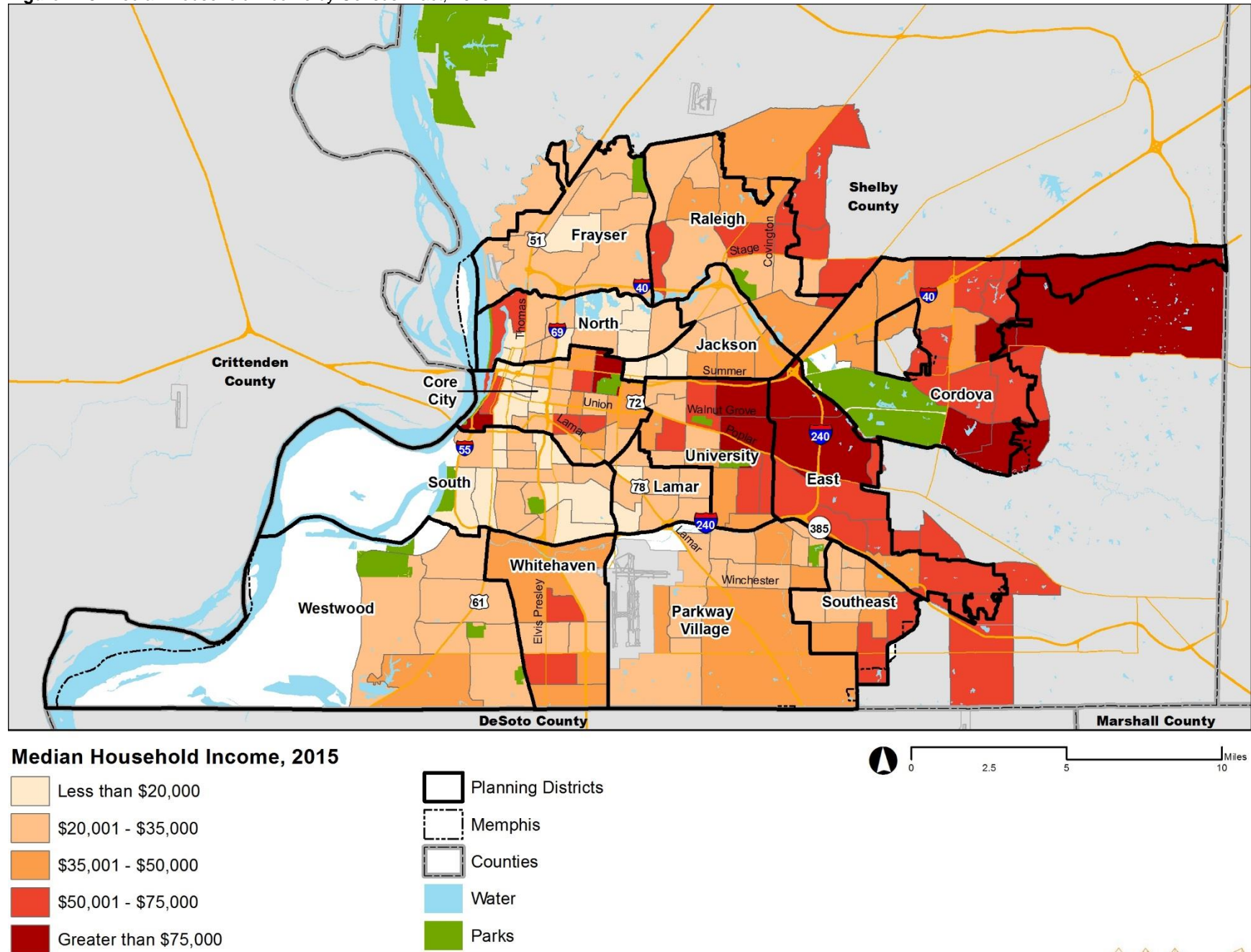
**Figure IV-8. Race and Ethnicity by Census Tract, 2015**



Census tracts were categorized as "Predominantly African-American" or "Predominantly White" if 60% or more of the population was African-American or White and less than 25% was Hispanic. Tracts were "Heavily Hispanic" if Hispanic population was greater than 25% and less than 60% was African-American or White. Tracts were "Mixed/Diverse" if none of those thresholds were met.

Sources: American Community Survey 5-Year Estimates, 2011-2015; Social Explorer; Strategic Economics, 2017.

**Figure IV-9. Median Household Income by Census Tract, 2015**



Sources: American Community Survey 5-Year Estimates, 2011-2015; Social Explorer; Strategic Economics, 2017.



## V. RECENT RESIDENTIAL INVESTMENT AND DISINVESTMENT

The household changes described in the previous chapter are driving new investment in some parts of the city, and disinvestment in others. This chapter provides a brief overview of residential real estate market conditions; assesses the amount, type, and location of residential investment occurring within the city; discusses the spatial patterns and causes of disinvestment (or “blight”); and reviews the public, non-profit, and quasi-public organizations and systems that are set up to deal with the consequences of neighborhood disinvestment.

### OVERVIEW OF RESIDENTIAL REAL ESTATE MARKET CONDITIONS

**Memphis’s housing market was deeply affected by the Great Recession and the foreclosure crisis.** **Figure V-1** shows the Zillow Home Value Index<sup>17</sup> for the U.S. compared to Memphis. Memphis experienced a more severe decline in home values during the Great Recession (2008-2011) compared to the U.S. overall, with home values declining 22 percent in Memphis during this period, compared to a 15 percent decline nationwide. This steep decline in part reflects the effects of the foreclosure crisis. At the peak of the crisis in 2008-2009, Shelby County had the highest foreclosure rate of any county in the state of Tennessee,<sup>18</sup> and the 45<sup>th</sup> highest foreclosure rate among 203 metropolitan areas nationally.<sup>19</sup>

**While median citywide home values have not fully recovered from the recession, some areas within Memphis are seeing significant home value increases.** Memphis home values have increased significantly since the end of the recession in 2011, but the median home value (\$77,700 in July 2017) remained below the pre-recession high (\$85,400 in 2006).<sup>20</sup> However, some neighborhoods have experienced more significant home value appreciation than other. **Figure V-3** shows change in median home sale values between 2010 and 2015 by Census Tract. The greatest increases occurred in Downtown and along the Poplar Avenue corridor in Core City, University, and East, as well as in outlying tracks in Raleigh, Cordova, and Southeast. Some Tracts (particularly in North and South) continued to experience home value declines during this period.

**The apartment market has also strengthened significantly since the end of the recession.** Asking rents have grown rapidly since the end of the recession and are significantly higher than 2008 levels (**Figure V-2**). According to the Apartment Association of Greater Memphis, the average occupancy rate for apartment

<sup>17</sup> The Zillow Home Value Index (ZHVI) is the median Zestimate valuation for a geographic area. A Zestimate gives consumers an indication of the fair value of a home under the assumption that it is sold as a conventional, non-foreclosure sale. As opposed to using an area’s actual median sale price, which is based on the mix of housing sold in the period of time, the ZHVI seeks to reduce extremes in sales prices due to variation in the composition of properties sold in one period versus another.

<sup>18</sup> Tennessee Housing Development Agency, Foreclosure Trends, <https://thda.org/research-planning/foreclosure-trends-1> (accessed December 12, 2017).

<sup>19</sup> “RealtyTrac: Memphis Foreclosure Filings Trend Down in 2009.” *Memphis Business Journal*, January 28, 2010. <https://www.bizjournals.com/memphis/stories/2010/01/25/daily22.html?surround=lfm>

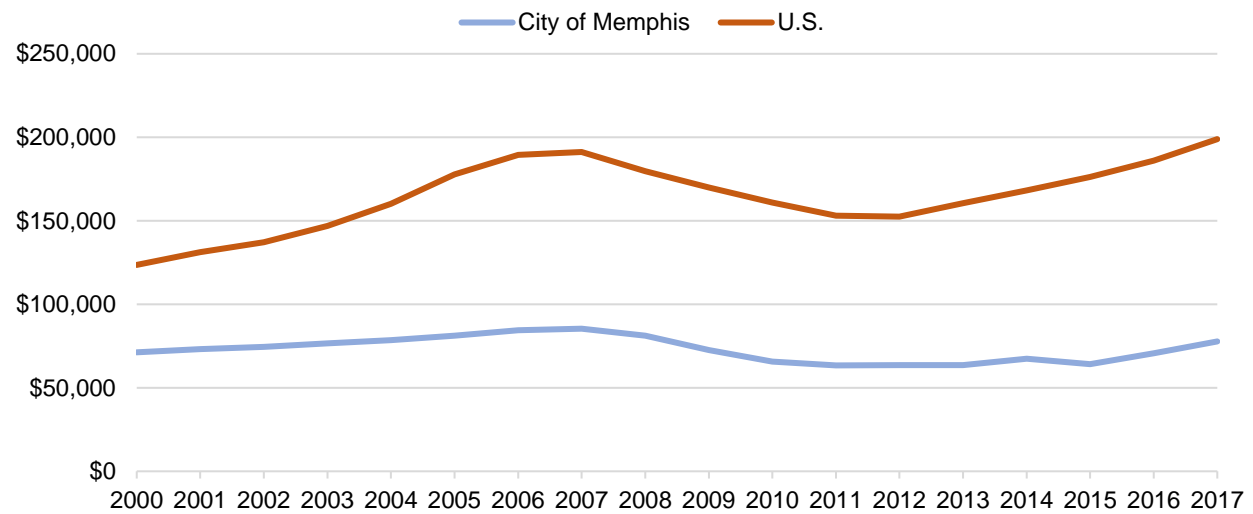
<sup>20</sup> Note that the median value of home sold in July 2017 was significantly higher (in the range of \$130,000). However, the ZHVI attempts to account for all homes in the city, not just homes on the market.

properties exceeds 93 percent,<sup>21</sup> creating a challenging market for renters and fueling demand for new multi-family development. Reliable data on rents by Census Tract were not available.

**Countywide, single-family construction is still well below pre-2008 levels, but the pace of multi-family construction is similar to the years before the recession.** **Figure V-4** shows annual residential building permits for new construction for Shelby County for multi-family and single-family units between 1995 and 2016. **Figure V-5** provides the average annual number of residential building permits pulled by time period. Both single-family and multi-family construction dipped significantly during the Great Recession. Multi-family construction is nearly back to pre-recession levels, but single-family construction – and thus overall housing production – remains historically low.

<sup>21</sup> Apartment Association of Greater Memphis, “The Source: Greater Memphis Area Multifamily Market Statistics,” June 30, 2017, <http://www.aagm.org/multifamily-market-statistics>.

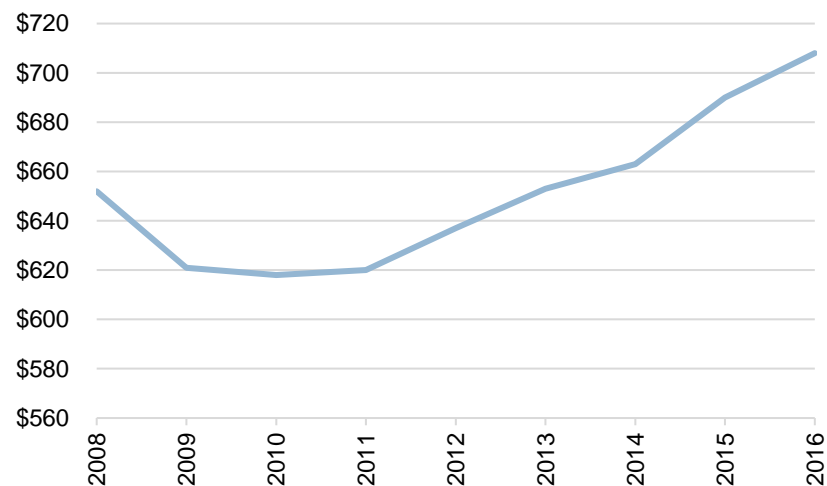
**Figure V-1. Zillow Home Value Index, 2000-2017**



The Zillow Home Value Index (ZHVI) is the median Zestimate valuation for a geographic area. A Zestimate gives consumers an indication of the fair value of a home under the assumption that it is sold as a conventional, non-foreclosure sale. As opposed to using an area's actual median sale price, which is based on the mix of housing sold in the period of time, the ZHVI seeks to reduce extremes in sales prices due to variation in the composition of properties sold in one period versus another.

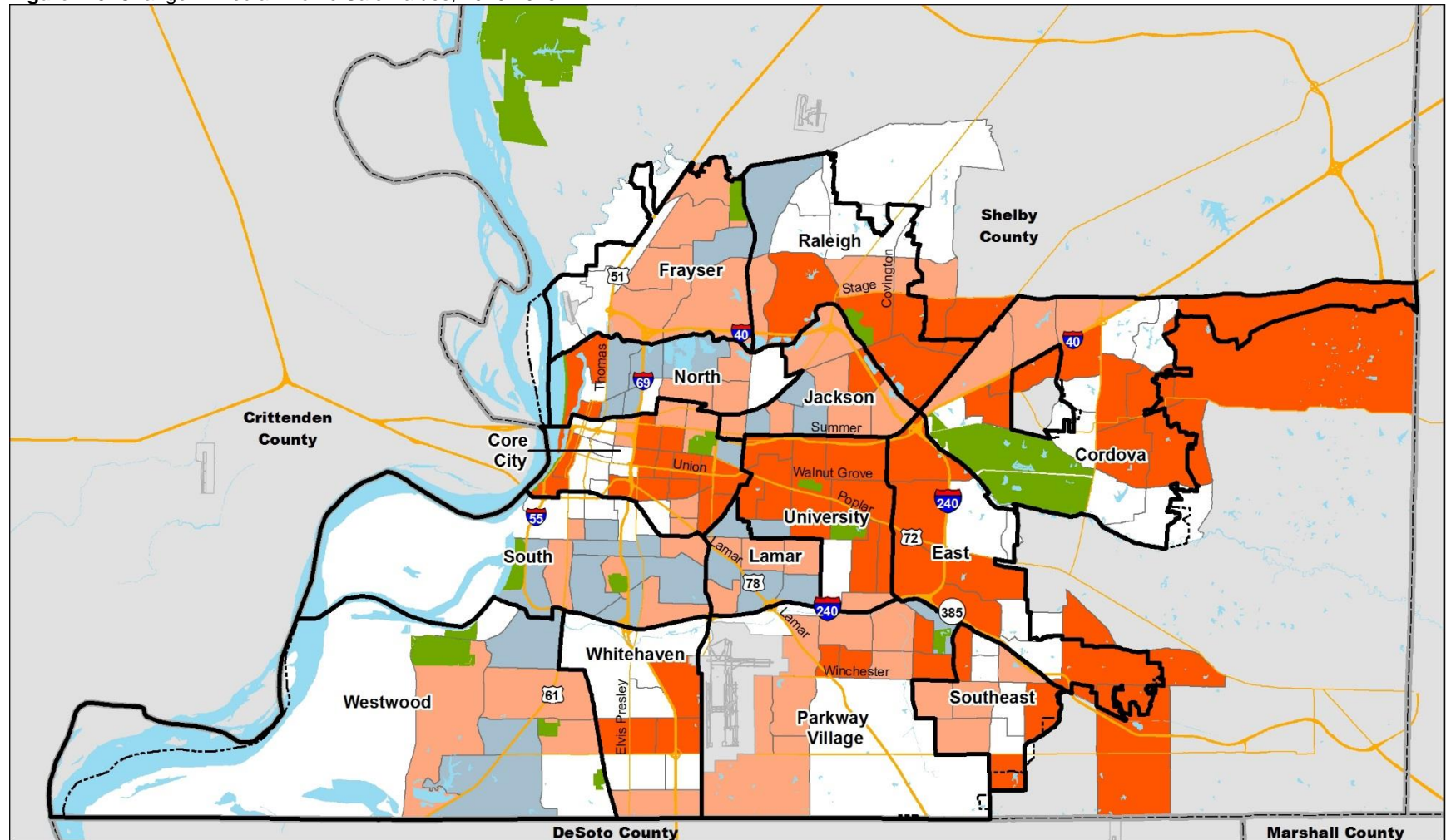
Sources: Zillow, 2017; Strategic Economics, 2017.

**Figure V-2. Average Multi-Family Asking Rents: City of Memphis, 2008-2016**



Source: Costar, 2017.

**Figure V-3. Change in Median Home Sale Values, 2010-2015**



**Median Home Value Change, 2010-2015**

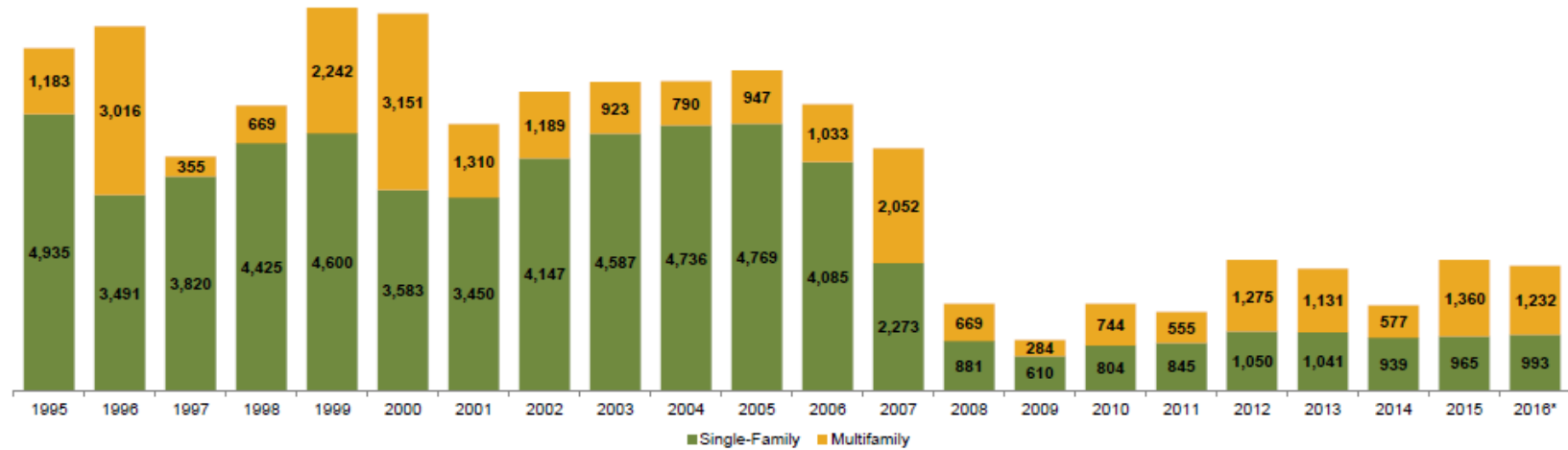
- Rapid Increase
- Stable/Moderate Increase
- Decrease
- Insufficient Data

- Planning Districts
- Memphis
- Counties
- Water
- Parks



Census tract categories represent three intervals of home value change. Decrease (greater than 0% in median home value change); Stable/Moderate Increase (0% to 66%); Rapid Increase (66% to 395%).  
 Sources: PolicyMap, 2017; Boxwood Means, 2017; Strategic Economics, 2017.

**Figure V-4.** Single-Family v. Multifamily Construction Permits: Shelby County, 1995-2016



Excerpted from RCLCO, 2017 (Data from U.S. Department of Housing and Urban Development).

**Figure V-5.** Average Annual Residential Building Permits by Time Period: Shelby County, 1995-2016

Period	Single-Family	Multi-Family	Total
1995-2000	4,142	1,769	5,912
2001-2007	4,007	1,178	5,185
2008-2011 (Great Recession)	785	563	1,348
2012-2016*	998	1,115	2,113

Source: U.S. Department of Housing and Urban Development; RCLCO; Strategic Economics, 2017.

## RECENT RESIDENTIAL INVESTMENT ACTIVITY IN MEMPHIS

The maps on the following pages illustrate (to the extent possible with available data sources) where new residential investment in the form of additions, alterations, and new construction is occurring.

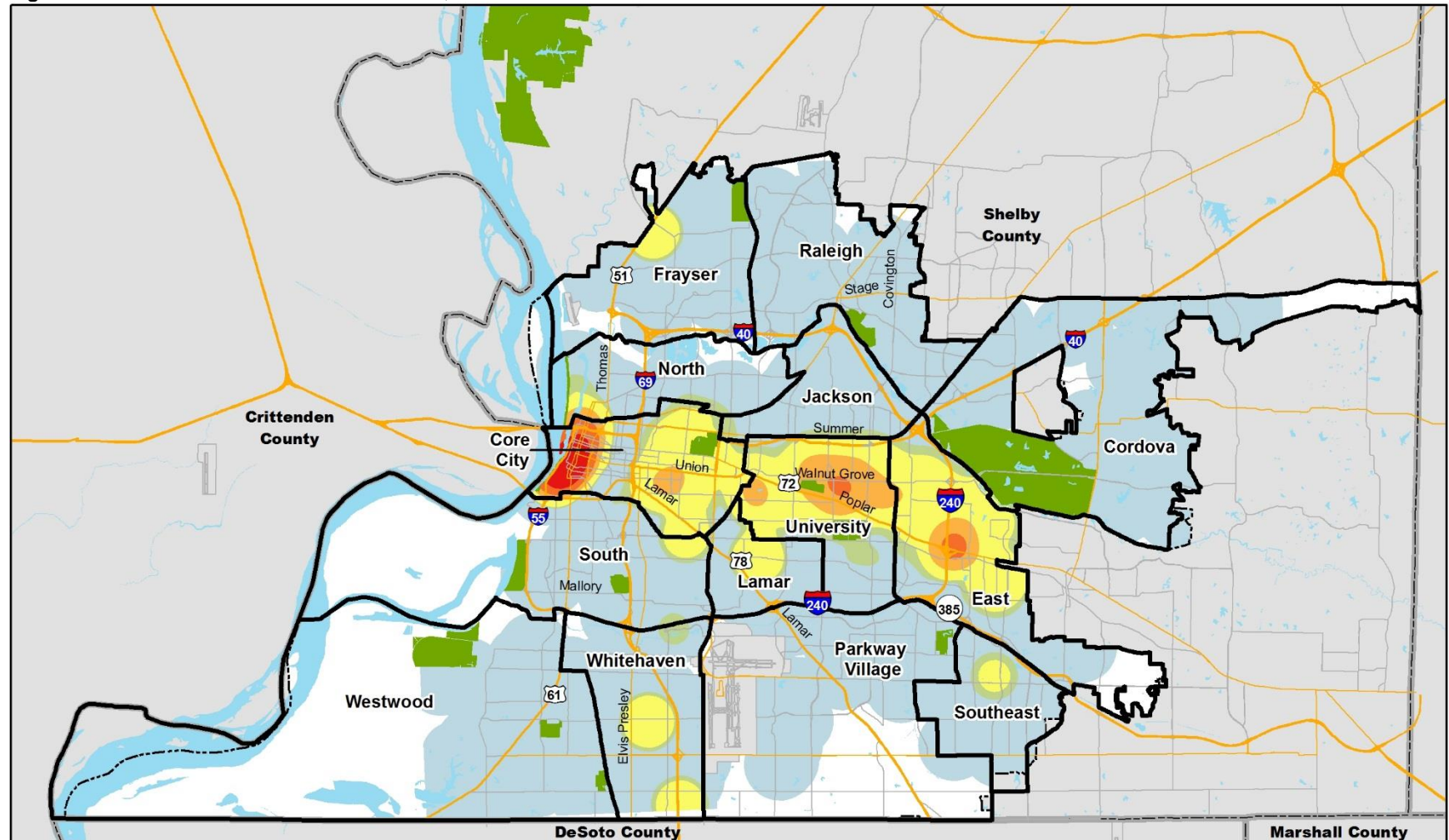
- **Figure V-6** shows the building permit valuation of residential additions and alterations; these include both individual homeowners remodeling existing homes, and developers who are renovating existing buildings for residential use (e.g., old apartment and office buildings in the Downtown).
- **Figure V-7** shows the building permit valuation of new residential construction.
- **Figure V-8** shows total residential investment including both additions/alterations and new construction.
- **Figure V-9** shows planned, proposed, and recently constructed residential development as tracked by the *Memphis Business Journal's* Crane Watch website (the City does not currently maintain a comprehensive list of development projects).
- **Figure V-10** shows the location of HOPE VI and Choice Neighborhoods development projects. Redevelopment of Memphis' public housing began under HUD's HOPE VI program in the 1990s. The city's last public housing project, Foote Homes, is now being redeveloped as South City Homes under the Choice Neighborhoods program.

**Residential investment (in both existing and new units) is most active in Core City and north along the waterfront, and along the Poplar Avenue corridor into University and East.** Among other amenities, these places tend to have excellent access to job centers, including office-based jobs in Core City (Downtown) and East (along Poplar Avenue), medical and educational jobs in the Medical District and Midtown, and/or transportation and logistics jobs in Parkway Village.

**It is unclear how many residential development projects are receiving tax incentives or other subsidies.** Because the City does not maintain a comprehensive list of development projects, it is unclear how many of the residential projects that are currently moving forward are receiving subsidy, or where within Memphis subsidy is required in order for development to be financially feasible. Several different entities are authorized to provide incentives or other form of subsidy for multifamily rental properties, including:

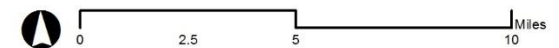
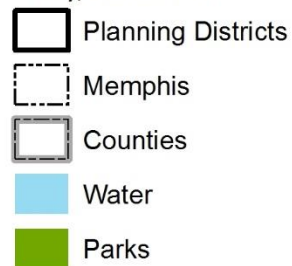
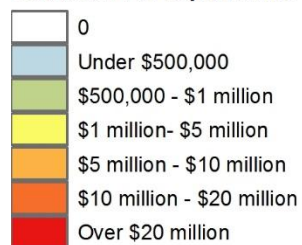
- **Health, Educational, and Housing Facility Board**, which can issue revenue bonds to finance multi-family housing for lower income households, seniors, and disabled persons.
- **The Tennessee Housing Development Agency**, which allocates the Low-Income Housing Tax Credit (LIHTC), a credit against federal income tax liability for owners and investors in low-income rental housing.
- **Downtown Memphis Corporation**, which can grant payments in lieu of taxes (PILOTs) within the Central Business Improvement District (CBID) or the Parkways, for projects that are expected to have a catalytic effect on Downtown. DMC also runs a low-interest loan program to help finance building renovations in the CBID. PILOTs are discussed in more detail in Chapter VIII.
- **EDGE**, which can issue PILOTs for multifamily residential properties that have at least 25 units, and reserve 10 to 15 percent of units for low- and moderate-income households.

**Figure V-6. Residential Additions and Alterations, 2012-2017**



**Residential Investment (Additions and Alterations), 2012-2017**

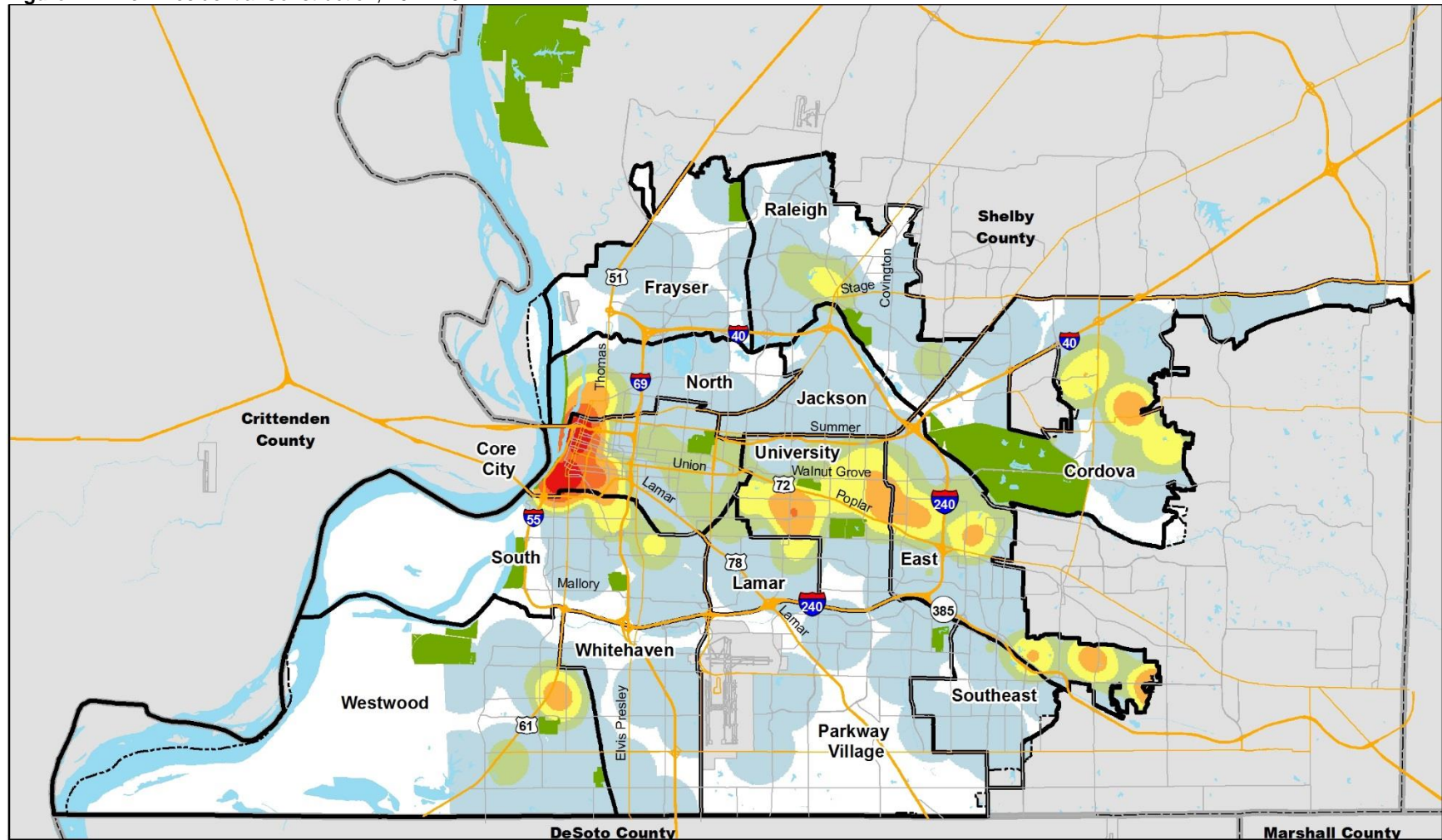
Valuation Per Square Mile



Sources: Shelby County 2017; Strategic Economics, 2017.

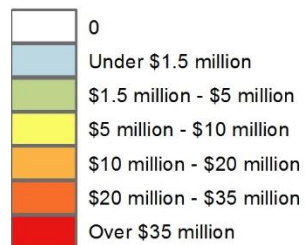
Neighborhood Change and Economic Opportunity in Memphis | April 4, 2018

**Figure V-7. New Residential Construction, 2012-2017**



**Residential Building Permits: New Construction, 2012-2017**

Valuation Per Square Mile



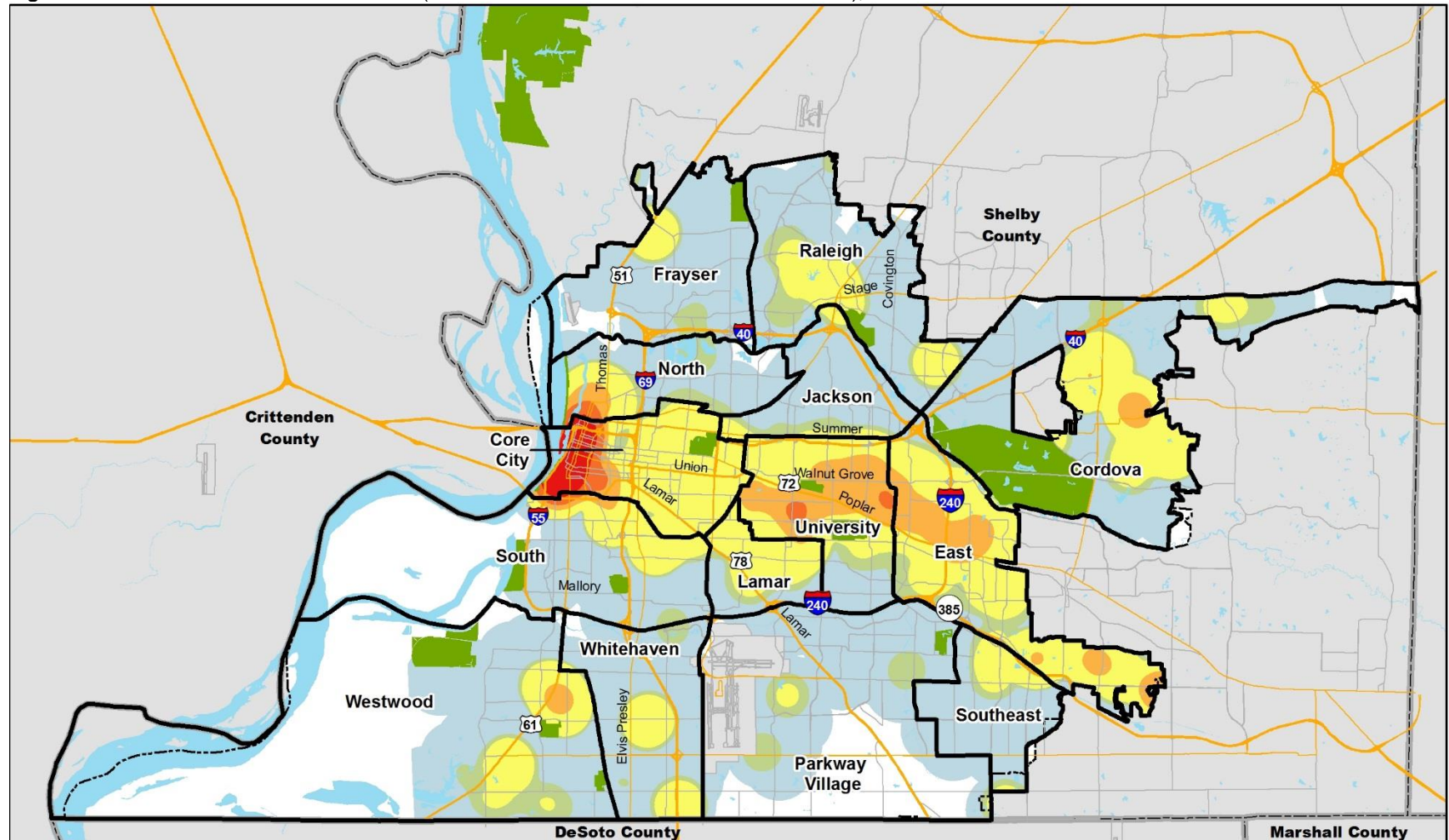
- Planning Districts
- Memphis
- Counties
- Water
- Parks



Sources: Shelby County (Bluff City Snapshot), 2017; Strategic Economics, 2017.

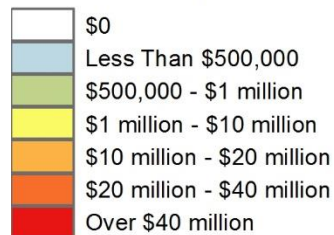
Neighborhood Change and Economic Opportunity in Memphis | April 4, 2018

**Figure V-8. Total New Residential Investment (New Construction and Additions and Alterations), 2012-2017**



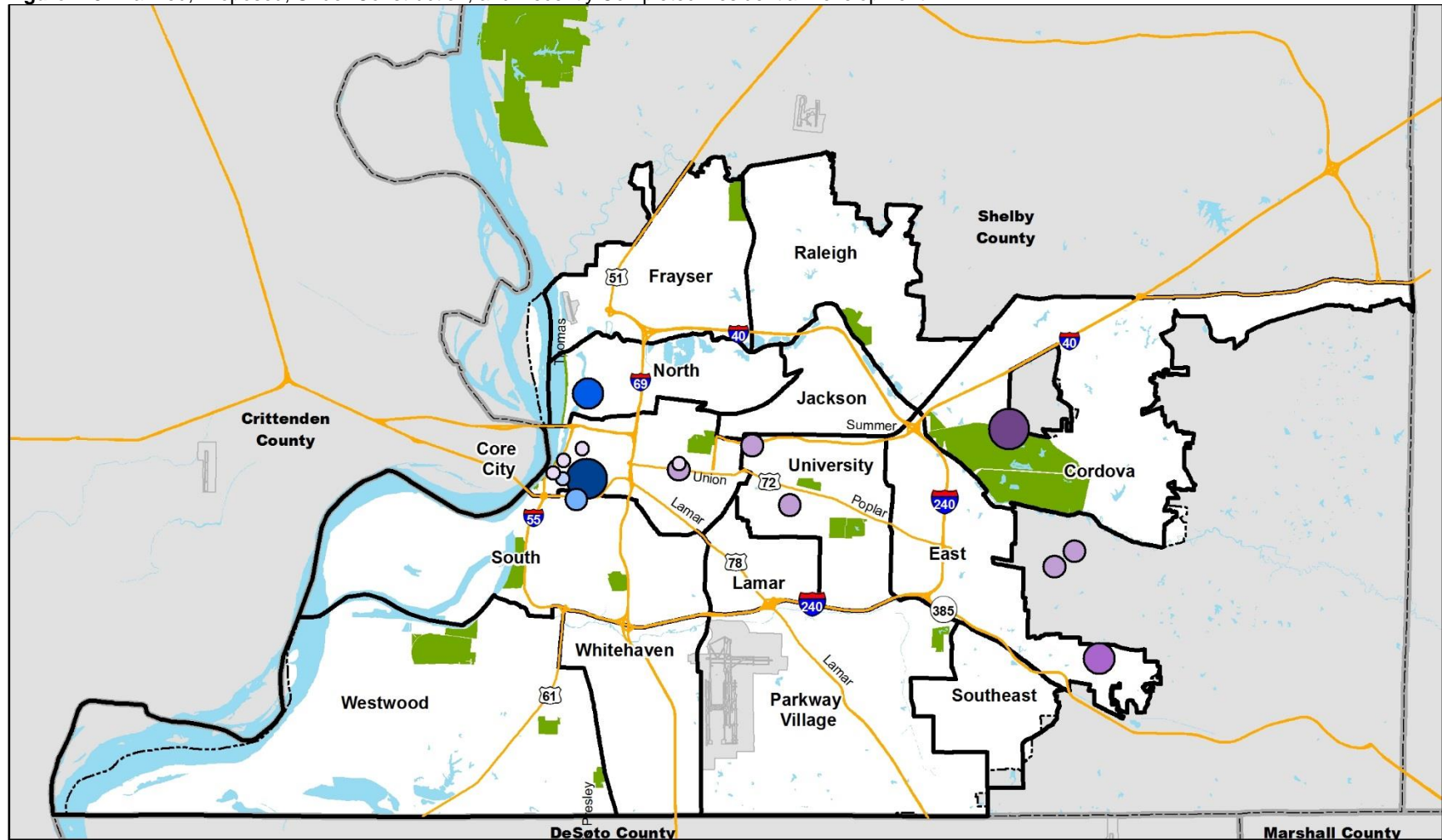
**Total Residential Investment (New Construction and Additions/Alterations), 2012-2017**

**Valuation Per Square Mile**



Note: Total residential investment includes permit valuation for new construction, alterations and additions to single-family and multifamily structures.  
Sources: Shelby County 2017; Strategic Economics, 2017.

**Figure V-9. Planned, Proposed, Under Construction, and Recently Completed Residential Development**



**Residential Developments: Completed, Under Construction, and Proposed**

**Mixed Income Residential  
Number of Units**

- Under 60
- 61 - 80
- 81 - 160
- Over 160

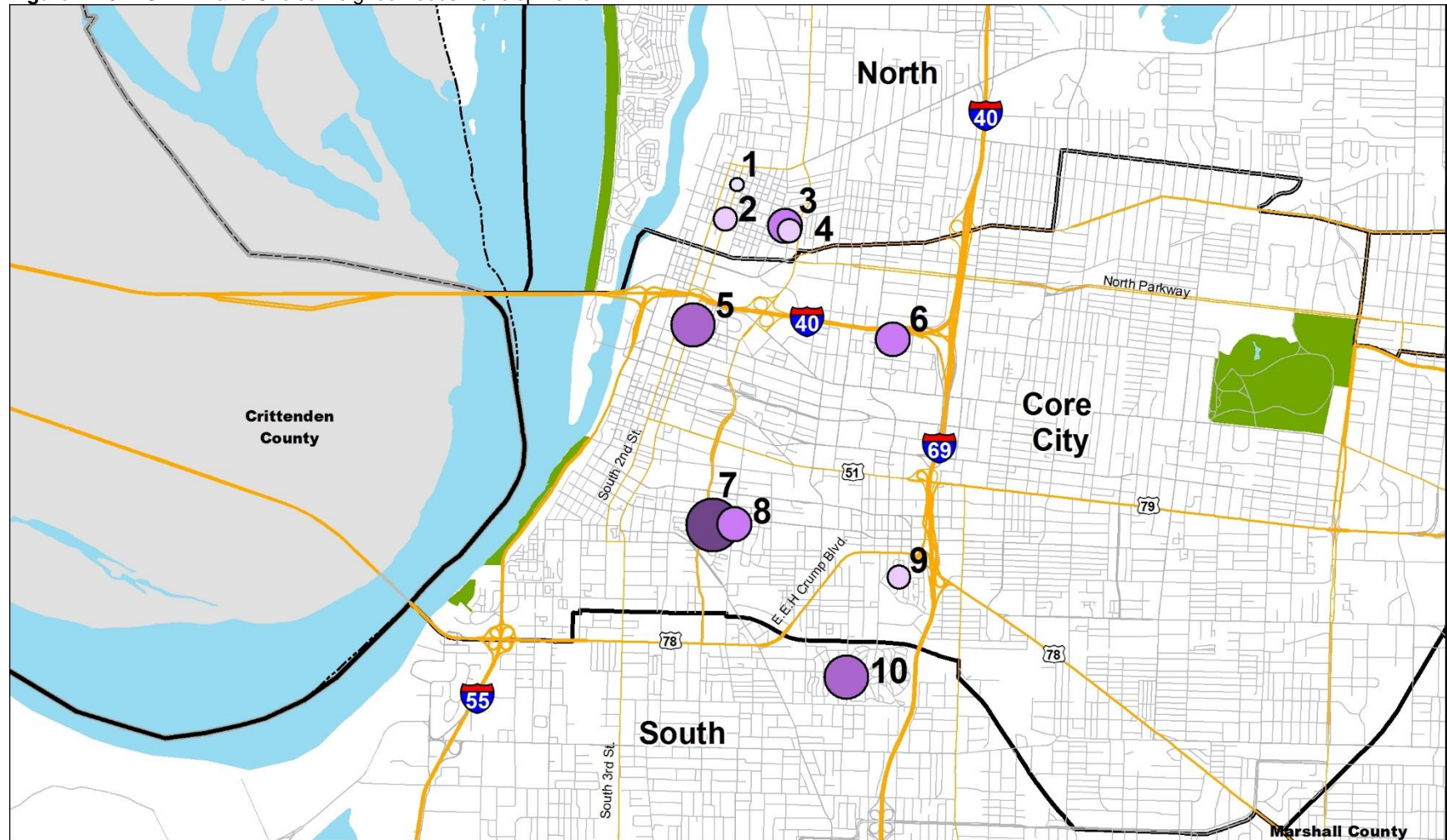
**Other Residential  
Number of Units**

- Under 150
- 151 - 355
- 356 - 1400
- Over 1400

- Memphis
- Planning Districts
- Counties
- Water
- Parks

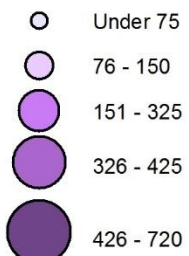


**Figure V-10. HOPE VI and Choice Neighborhoods Developments**



**Memphis Hope VI Developments, April 2017**

**Number of Units**



**Development Name**

- |                       |  |
|-----------------------|--|
| 1. Mangolia Terrace   | 6. Legends Park                          |
| 2. Greenlaw Place     | 7. South City Homes (Under Construction) |
| 3. Uptown Homes       | 8. Cleaborn Homes                        |
| 4. Metropolitan Place | 9. University Place                      |
| 5. Uptown Square      | 10. College Park Homes                   |

Sources: HUD Open Data, 2017; Strategic Economics, 2017.

Note: South City Homes is a Choice Neighborhoods Development



## DISINVESTMENT

While new investment is occurring in some parts of the city, other areas are experiencing disinvestment in the form of abandoned, physically deteriorating, or “blighted” properties. The Memphis Blight Elimination Charter defines blighted properties as “vacant or derelict structures/buildings and unmaintained real property, often in such conditions that cause public nuisances, violations of relevant state laws and local ordinances and usually characterized by litter, dumping, and abandoned personal property.” There are many possible indicators for understanding where disinvestment is occurring within the city, including property tax delinquencies, tax sales, demolitions, unoccupied structures, and a blight rating from a 2015 survey that sought to capture structural deficiencies, abandoned vehicles, trash, and overgrown vegetation. Maps of these different indicators tend to show similar spatial patterns, at least at a citywide scale.

This analysis uses tax sale eligibility as a proxy for understanding where property disinvestment is occurring. Under Tennessee law, a property becomes eligible for tax sale after two years of property tax non-payment (also known as tax delinquency). As discussed below, property owners may stop paying their property taxes for a variety of reasons. In general, however, tax delinquency is a signal that a property owner no longer has the financial resources and/or economic incentive to continue to maintain – or even retain ownership of – a property. Tax sales are used as an indicator for this analysis because they represent a direct burden for the public sector,<sup>22</sup> but also a potential opportunity for strategically assembling land and returning it to a productive use. As of 2015, there were 3,818 properties currently in the tax sale process, and another 12,165 properties that were eligible based on non-payment of taxes. Residential properties accounted for 85 percent of all properties that were eligible for or actively involved in the tax sale process.

**In general, tax sale eligible properties are concentrated in places that are experiencing household loss, declining homeownership, and/or declining median home values.** Figure V-11 shows the percent of residential parcels in each Census Tract (by acreage) that were either eligible for or actively involved in the tax sale process in 2015. This includes large parts of Frayser, North, South, Jackson, Westwood, and Lamar.

**A variety of complicated market, economic, financial, and regulatory factors are driving neighborhood disinvestment.** Many private parties, including individual homeowners, lenders, owners of rental properties, and other investors, can be involved in the abandonment or deterioration of a property, but there are limited data as to the underlying cause(s) that lead to any particular property becoming blighted. Some of the main causes are described qualitatively below, based on the experience of local experts.<sup>23</sup> (Note that, as discussed in more detail on the following page, these causes are often interrelated).

- **Excess supply of housing relative to demand:** Many of Memphis’ historic neighborhoods have experienced significant outmigration of households to newly annexed suburban neighborhoods on the city’s edge. These newer neighborhoods offer better proximity to the region’s new job centers, more modern homes, and access to better schools. As households who have the financial resources

<sup>22</sup> Both because unpaid property taxes reduce the City and County’s tax revenues, and because tax delinquent properties that are not sold at auction are conveyed to the Shelby County Land Bank where they become the responsibility of the public sector to maintain.

<sup>23</sup> The main sources for this discussion include: Interviews with Steve Barlow, December 2017 and Dawn Kinard (Administrator, Shelby County Land Bank), December 2017; Steve Barlow, Tommy Pacello, and Josh Whitehead, “Regulatory Created Blight in a Legacy City: What Is It and What Can We Do about It,” U. Mem. L. Rev. 46 (2015): 857; Steven E. Barlow, Daniel M. Schaffzin, and Brittany J. Williams, “Ten Years of Fighting Blighted Property in Memphis: How Innovative Litigation Inspired Systems Change and a Local Culture of Collaboration to Resolve Vacant and Abandoned Properties,” Journal of Affordable Housing 25, no. 3 (2017): 347–89; and working papers prepared for Memphis 3.0 on the topics of blight, housing and infill development, and efficiency and conservation.

to do so have moved to new neighborhoods, Memphis' household growth has been too slow to generate sufficient demand for the older houses in less desirable locations. As a result of this declining demand, property owners in certain neighborhoods who wish to sell (or rent) may not be able to find a willing buyer (or renter), and thus may not have an incentive to continue to pay property taxes or maintain their properties.

- **Financial hardship:** Some property owners (whether homeowners or rental property owners) may lack the financial resources to adequately maintain their properties or pay property taxes. Financial instability can have many causes, such as unemployment, low wage unemployment, foreclosures, bankruptcies, personal health emergencies, and other factors.
- **Effects of the subprime mortgage crisis:** As discussed above, Memphis was hit hard by the subprime mortgage crisis during the Great Recession. Many households lost their homes to foreclosure, and by 2015 an estimated one-third of homes owed in Memphis were “underwater,” or worth less than the outstanding mortgage.<sup>24</sup> This crisis led to a number of different challenges related to maintenance and abandonment. Some homeowners walked away from their properties upon receiving a notice of foreclosure proceedings from the bank, even though the bank never actually proceeded with or completed the foreclosure process. The homeowner may sincerely believe that they no longer own the property – and therefore abandon it – even though the title was never actually transferred to the lender. In other cases, financial institutions did complete the foreclosure process, but do not have the financial incentive or systems in place to adequately maintain the property.
- **Regulatory challenges:** In some cases, the cost of bringing a property into conformance with zoning or subdivision regulations, building codes, fire codes, or other local regulations is perceived to be greater than the economic benefit of making the required investment. This can occur when there are regulatory changes that create nonconforming uses, or in cases where meeting basic building codes appears to the property owner to be too onerous. Examples include vacant, unpermitted second-story flats or accessory dwelling units, or vacant lots that are too small to accommodate new development under current land use regulations.<sup>25</sup>

**The causes of neighborhood disinvestment are highly interrelated and can quickly lead to a downward cycle.** For example, a property owner may stop maintaining a property and paying utility bills or property taxes because they cannot find a buyer or renter, and/or because they lack the necessary financial resources. Once a property is abandoned, or a property owner falls behind on basic upkeep or on utility bills, physical deterioration can occur quickly. For example, a pipe that freezes and bursts after a power shutoff, a leak or broken window that allows moisture into the structure, or copper theft can all rapidly lead to a property that is difficult or impossible to salvage. At the same time, late fees and taxes may add up to the point where the cost of bringing the taxes current and the property back to a habitable condition far exceed the value of the property. Property deterioration also has a ripple effect, whereby blighted and abandoned properties contributed to reducing the value of neighboring properties so that was initially a problem with only one property becomes an issue for multiple nearby properties as well.

**As a result of this cycle of disinvestment, much of the housing stock is in poor physical condition, particularly older rental units (multifamily or single family) in the city's lower-income neighborhoods.** Some properties are so compromised that the cost of bringing them back to a habitable condition and paying off taxes and late fees far exceeds the value of the property. For these properties, demolition of the existing structure may be the only feasible alternative. In other cases, the unit may be

<sup>24</sup> Barlow, Schaffzin, and Williams, “Ten Years of Fighting Blighted Property in Memphis.”

<sup>25</sup> Steve Barlow, Tommy Pacello, and Josh Whitehead, “Regulatory Created Blight in a Legacy City: What Is It and What Can We Do about It.”

habitable, but in such poor physical condition that residents suffer from health problems (e.g., lead exposure, or asthma related to mold) or face high energy costs due to inefficient heating and cooling systems. Previous studies have estimated that approximately 10 percent of the city's housing units have either a moderate or a severe housing problem. The most common problems included open cracks, water leakage, or heating problems. The most serious problems include structural damage, dilapidation, and serious damage from fire. Housing problems were most prevalent among rental units, with the greatest concentration of physical housing problems found in Frayser, South Memphis, the Lamar corridor, and Westwood.<sup>26</sup>

**Memphis has a wide variety of public, non-profit, and quasi-public organizations and systems that are set up to deal with the consequences of neighborhood disinvestment, including tax delinquent and physically deteriorating properties.** In general, these systems are set up to address physical deterioration and to bring properties current on their taxes and fees. Some of the other underlying causes of disinvestment (lack of housing demand, personal financial instability) are much more challenging for local governments to address directly. Some of the main systems that have been established to address blighted properties include:

- **Code enforcement:** The Shelby County Environmental Court hears all code violation cases, as well as cases filed under Tennessee's Criminal Nuisance Statute or under the Tennessee Neighborhood Preservation Act (discussed below). Cases may be brought before the court by the City of Memphis Department of Housing/Code Enforcement, Fire Department Anti-Neglect Department, Health Department, Animal Services, Police Department, or various Shelby County departments. (The court also hears public nuisance and Neighborhood Preservation Act cases, discussed below). The Environmental Court has been widely recognized as a national model. However, the magnitude of the code enforcement challenge exceeds the resources available to the City and County for code enforcement.
- **Neighborhood Preservation Act (NPA) litigation:** The Tennessee Neighborhood Preservation Act (NPA) allows neighbors, non-profit entities, and cities to sue property owners for failure to comply with housing or building codes. The University of Memphis School of Law and City of Memphis jointly run a Neighborhood Preservation Clinic, which represents the City in NPA lawsuits. Since 2008, the City has filed approximately 1,600 lawsuits under NPA. Under state law, if the property owner is unable or unwilling to rehabilitate a property that is determined to be a public nuisance, the court can appoint a non-profit organization as a receiver to abate the public nuisance; however, it can be extremely challenging to find non-profit organizations that are willing to assume this responsibility.<sup>27</sup>
- **Tax sale process:** Under Tennessee law, properties are subject to sale at public auction after two years of non-payment of property taxes. The Shelby County Trustee currently serves as the tax collector and conducts tax sales for both the County and the City of Memphis (which each levy separate property taxes). At minimum, properties must be sold for the value of the unpaid taxes and late fees. Properties that are not sold are conveyed to the Shelby County Land Bank (discussed below). Properties that are sold at auction may be redeemed after the auction by the previous owner, the heirs of the previous owner, or lien holders for up to 30 days for vacant and abandoned properties, or up to one year for other properties depending on the number of years the property has been delinquent.
- **Land banking:** The Shelby County Land Bank functions as the real estate arm of the County, holding and marketing properties that are not purchased during the tax sale process. The Land Bank can sell properties to new owners, or donate them to non-profit organizations for specific, local,

<sup>26</sup> City of Memphis Division of Housing & Community Development, FY 2014-2016 Consolidated Plan.

<sup>27</sup> Barlow, Schaffzin, and Williams, "Ten Years of Fighting Blighted Property in Memphis."

community serving needs. However, under Tennessee law, the Land Bank can only hold properties for five years, and has very limited ability to proactively acquire properties in order to assemble sites for larger scale redevelopment projects. In 2015, the City of Memphis established the Blight Authority of Memphis to serve as a quasi-public land bank with the ability to more strategically acquire and assemble land for the purposes of returning vacant, abandoned, foreclosed or tax delinquent properties to a productive use, reducing blight, and improving quality of life in Memphis neighborhoods. Unlike the Land Bank, the Blight Authority will have the power to purchase and assemble land that is not eligible for tax sale (although it is also expected to purchase properties from the Land Bank).

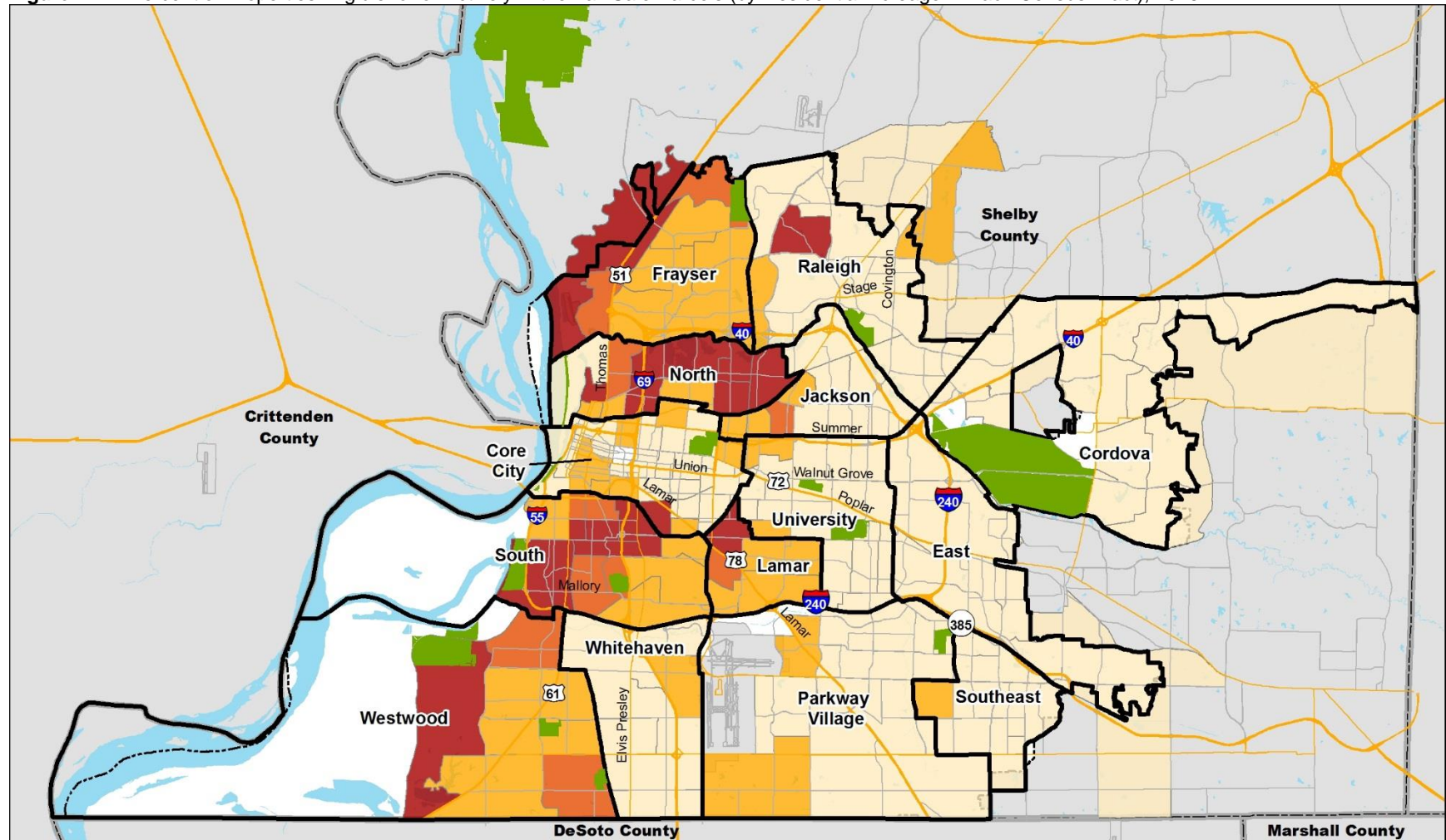
**City, County, nonprofit, and private sector organizations are coordinating their efforts around addressing blighted properties through the Memphis Blight Elimination Charter and Blight Elimination Steering Team.** The Blight Elimination Charter (established in 2015-2016) created a citywide, strategic framework for addressing blight. The Action Plan for the charter is focused on four action areas: using data and information systems to catalogue, understand, and monitor blighted property in Memphis; engaging neighborhood residents, business and community groups as essential partners to resolve blighted properties; improving the efficiency, effectiveness, and coordination of code enforcement and “neighborhood maintenance” policies and efforts; and reclaiming and reusing vacant land and buildings. A Blight Elimination Steering Team (BEST) convened by Neighborhood Preservation Inc. is charged with implementing specific action items. As identified in the “Blight & Neighborhood Improvement Research Report” produced for the Memphis 3.0 process, there is an opportunity to align the comp plan with the Blight Elimination Charter efforts.

**As part of the Shelby County *Greenprint for Resilience* project, the City and County are collaborating to create a framework for addressing vacant lots in the South Cypress Creek neighborhood in the Westwood planning district.** Through this project, the City and County are creating a vacant lot re-use decision matrix for determining whether vacant lots should serve as flood or nature lots, be redeveloped as housing, sold to an adjacent property owner to make an expanded lot, or donated to a church, school, or other community organization. The matrix is specific to the South Cypress Creek area, where there is significant flood risk. In other neighborhoods – for example, places that are located near major employment centers, in proximity to a neighborhood anchor, or near other neighborhoods that are experiencing new investment – there may be more short- or long-term opportunities to assemble properties for redevelopment.

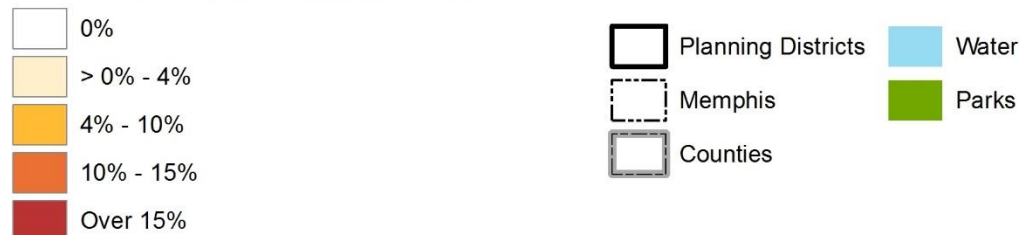
**Several programs are also in place to address energy efficiency and health challenges related to the condition of the housing stock.** Memphis Light, Gas and Water (MLGW) currently has two programs to address residential energy efficiency. The Healthy Homes Partnership (a collaboration among healthcare providers, legal services experts, housing providers and advocates, and other interested parties) is working to address the health impacts of poor housing conditions.<sup>28</sup>

<sup>28</sup> For more information on this issue and existing programs, see the Efficiency and Conservation Background and Alignment Report prepared for Memphis Comprehensive Plan 3.0.

**Figure V-11. Percent of Properties Eligible for or Actively in the Tax Sale Parcels (by Residential Acreage in Each Census Tract), 2015**



**Active and Eligible Residential Tax Sale Parcels, 2015**  
**% of Total Residential Acres Per Census Tract**



Note: Tracts are compared against the City overall where active and eligible residential tax sale parcels represent 4% of total acreage.  
 Sources: Shelby County (Bluff City Snapshot Database), 2017; Strategic Economics, 2017.

## VI. EMPLOYMENT TRENDS

This chapter assesses historic and projected employment trends in Memphis. The analysis in this chapter sets the context for understanding both the employment and entrepreneurship opportunities that are available for Memphis residents (discussed in Chapter VII), and the forces driving the city's commercial land use and investment patterns (discussed in Chapter VIII). This chapter includes the following sections:

- Approach and key definitions.
- Overview of historic employment trends in Memphis, in comparison with the United States and four peer regions: Cincinnati, OH; Indianapolis, IN; Kansas City, MO; and Louisville, KY.
- Discussion of the industry clusters that are focus of various economic development initiatives in the city and Shelby County.
- Memphis' future employment outlook, including the sectors that are projected to grow in the short, medium, and long term.

### APPROACH AND KEY DEFINITIONS

The analysis in this chapter is intended to demonstrate how Memphis' economy has evolved over time, and how that evolution has shaped both the current industry mix and the spatial location of jobs within the city. However, long-term employment trend data (going back to 1970) is only available at the county level. Therefore, historic employment trend numbers in this report are shown by county rather than by city. The majority of jobs in Shelby County (85 percent in 2014) are located within the city of Memphis.

The discussion in this chapter refers to both employment sectors and industry clusters. These terms are defined below:

- **Employment sectors** are the broad categories (such as transportation and warehousing, manufacturing, and professional, scientific and technical services) that are typically used to track employment change over time. Because available data sources track employment by sector, most of the discussion and data in this section focus on sectoral trends in employment.
- **Target industry clusters** may include related industries from across multiple employment sectors, are typically the focus of economic and workforce development strategies.

Note that the classification system used to track employment by sector changed in 2001 from the Standard Industrial Classification (SIC) system to the North American Industrial Classification System (NAICS). Thus, while this analysis includes an analysis of total employment since 1970, direct comparison by sector is not possible for the pre- and post-2001 periods.<sup>29</sup>

### HISTORIC EMPLOYMENT TRENDS

This section describes historic employment trends by sector in Memphis (Shelby County), compared to the United States and to four peer regions: Cincinnati, OH; Indianapolis, IN; Louisville, KY; and Kansas City, MO. The peer regions are all midsize cities located in the Mid-South and Midwest, have significant

<sup>29</sup> NAICS was developed in 1997. However, the U.S. Department of Commerce's Bureau of Economic Analysis (BEA) employment estimates – the source for the historic trend data in this report – switch from SIC to NAICS beginning in 2001.

employment in transportation and logistics, and are considered competitors with Memphis in attracting new businesses. Because data on employment trends over time is only available at the county level, the employment numbers are shown at the geography of the counties that contain the majority of the employment in each peer city.<sup>30</sup>

**Shelby County's employment base grew rapidly throughout the 1970s and 1980s but began to slow in the 1990s.** Figure VI-1 shows total employment and employment growth by time period, breaking the 2000-2015 period out in more detail to show the effects of the Great Recession (2008-2011). Through the 1970s and 1980s, Shelby County's growth rate rivaled that of the U.S. as a whole, and exceeded growth in the peer regions. Growth began to slow in the 1990s, and between 2000 and 2008 the county's growth rate (0.5 percent a year) was less than half the national average (1.1 percent a year).

**Shelby County was less deeply affected by the Great Recession (2008-2011) than the peer regions, but has experienced the slowest recovery.** Between 2008 and 2011, the rate of job loss in Shelby County was just slightly higher than the national average, and lower than the rate in Cincinnati, Indianapolis, and Kansas City. However, between 2011 and 2015, Shelby County has experienced slower recovery, adding jobs at a rate of 0.9 percent a year. In comparison, and the peer regions all grew by more than one percent a year, and nationally employment grew by two percent a year (Figure VI-1).

**Compared to peer regions and the U.S. as a whole, Shelby County's manufacturing sector has been relatively small since 1970.** Figure VI-2 shows manufacturing employment over time for the peer cities and the U.S. In 1970, manufacturing accounted for 18 percent of employment in Shelby County, compared to 22 percent in the U.S., 31 percent in Cincinnati, 28 percent in Louisville, 26 percent in Indianapolis, and 21 percent in Kansas City. Because the manufacturing base was relatively smaller to begin with, deindustrialization affected Shelby County less severely than the peer regions. Between 1970 and 1990, the county lost 15 percent of its manufacturing employment. Each of the peer regions lost about a quarter of their manufacturing jobs during this time period.

**Since the 1970s, Shelby County has held its dominance in transportation and warehousing sectors, compared to the U.S. and peer regions.** Figure VI-3 shows employment in the combined transportation, warehousing, wholesale, and utilities sectors. Between 1970 and 2000, employment in these sectors grew by 132 percent in Memphis, compared to 72 percent in Indianapolis, 74 percent in Louisville, 21 percent in Cincinnati, 8 percent in Kansas City, and 75 percent nationwide.

**However, in recent years, Indianapolis and Louisville have outpaced Shelby County's job growth in the transportation and warehousing sectors.** Shelby County remains the county with the largest transportation, warehousing and utilities sector. However, Shelby County saw net job loss in this sector between 2001 and 2015 (although the sector has partially recovered since the end of the recession in 2011). In comparison, While Indianapolis and Louisville also lost jobs in these sectors during the recession, they have added jobs more quickly since 2011 (Figure VI-3).

**Shelby County's economy is increasingly driven by the service sectors, particularly education, health care and social assistance.** Since 2001, the fastest growing industry sectors have been education, health care, and social assistance. Accommodation and food services; professional, scientific, and technical services; and management, and administrative, support, and waste management services are also growing.

<sup>30</sup> For Kansas City, three counties in Missouri are used.

**Shelby County has a higher share of employment in administrative, support, waste management, and remediation services (i.e. business support or back office services) than its peers.<sup>31</sup>** Figure VI-4 compares employment by sector among the peer regions in 2015. Administrative, support, waste management and remediation accounted for 11 percent of Shelby County’s employment, higher than the national average (6 percent) and any of the peer regions.

**Shelby County has been slower than the peer regions to diversify its economy and attract “knowledge-based” jobs.** Shelby County has an average share of jobs in health and education, and a relatively low percentage of jobs in professional services, information, finance, and management. Health care, education, and social assistance sectors account for a similar share of Shelby County’s employment (14 percent) as the national average, and less than in Cincinnati and Indianapolis. Shelby County has been slower than the peer regions to attract “knowledge-based” jobs in sectors like professional, scientific, and technical services, information, finance and insurance, management of companies (**Figure VI-4**).

<sup>31</sup> This sector comprises establishments performing routine support activities for the day-to-day operations of other organizations. These essential activities are often undertaken in-house by establishments in many sectors of the economy. The establishments in this sector specialize in one or more of these support activities and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services.

**Figure VI-1. Total Employment: Shelby County, Peer Regions, and the U.S., 1970-2015**

	1970	1980	1990	2000	2008	2011	2015
<b>Total Employment</b>							
Memphis (Shelby County)	350,332	442,359	535,609	625,184	650,433	637,156	660,434
Cincinnati (Hamilton County)	495,963	547,931	626,569	671,278	633,967	608,917	638,641
Indianapolis (Marion, County)	443,225	502,139	608,260	710,788	714,999	694,211	733,201
Louisville (Jefferson County)	346,637	395,732	444,074	523,478	535,853	524,169	570,618
Kansas City (Platte, Clay, and Jackson Counties)	444,660	497,632	555,041	623,467	644,773	617,947	653,527
United States	91,277,600	113,983,200	138,330,900	165,370,800	179,639,900	176,278,700	190,195,400
<b>Average Annual Percent Change</b>							
	1970-80	1980-90	1990-2000	2000-08	2008-11	2011-15	1970-2015
Memphis (Shelby County)	2.6%	2.1%	1.7%	0.5%	-0.7%	0.9%	2.0%
Cincinnati (Hamilton County)	1.0%	1.4%	0.7%	-0.7%	-1.3%	1.2%	0.6%
Indianapolis (Marion, County)	1.3%	2.1%	1.7%	0.1%	-1.0%	1.4%	1.5%
Louisville (Jefferson County)	1.4%	1.2%	1.8%	0.3%	-0.7%	2.2%	1.4%
Kansas City (Platte, Clay, and Jackson Counties)	1.2%	1.2%	1.2%	0.4%	-1.4%	1.4%	1.0%
United States	2.5%	2.1%	2.0%	1.1%	-0.6%	2.0%	2.4%

Sources: Bureau of Economic Analysis, 2015; Strategic Economics, 2017.

**Figure VI-2.** Manufacturing Employment: Shelby County, Peer Regions, and the U.S., 1970-2000 and 2001-2015\*

<b>Manufacturing Employment</b>	<b>SIC Classification</b>				<b>NAICS Classification</b>			
	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2001</b>	<b>2008</b>	<b>2011</b>	<b>2015</b>
Memphis (Shelby County)	61,331	61,491	51,840	47,930	44,701	38,661	36,094	36,020
Cincinnati (Hamilton County)	152,891	139,286	118,406	92,867	74,036	57,302	48,862	50,023
Indianapolis (Marion, County)	113,668	103,953	86,416	84,230	78,431	66,779	56,249	56,058
Louisville (Jefferson County)	95,918	87,532	70,652	63,887	57,265	43,999	39,480	49,379
Kansas City (Platte, Clay, Jackson Counties)	91,986	84,388	70,439	62,618	47,747	42,733	38,086	41,864
United States	19,687,400	20,761,100	19,664,200	19,038,800	16,921,600	13,980,300	12,385,700	13,091,200
<b>Percent of Total Employment</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2001</b>	<b>2008</b>	<b>2011</b>	<b>2015</b>
Memphis (Shelby County)	18%	14%	10%	8%	7%	6%	6%	5%
Cincinnati (Hamilton County)	31%	25%	19%	14%	11%	9%	8%	8%
Indianapolis (Marion, County)	26%	21%	14%	12%	11%	9%	8%	8%
Louisville (Jefferson County)	28%	22%	16%	12%	11%	8%	8%	9%
Kansas City (Platte, Clay, Jackson Counties)	21%	17%	13%	10%	8%	7%	6%	6%
United States	22%	18%	14%	12%	10%	8%	7%	7%
<b>Average Annual Percent Change</b>	<b>1970-80</b>		<b>1980-90</b>	<b>1990-2000</b>	<b>2001-2008</b>		<b>2008-11</b>	<b>2011-15</b>
Memphis (Shelby County)	0.0%		-1.6%	-0.8%	-1.7%		-2.2%	-0.1%
Cincinnati (Hamilton County)	-0.9%		-1.5%	-2.2%	-2.8%		-4.9%	0.6%
Indianapolis (Marion, County)	-0.9%		-1.7%	-0.3%	-1.9%		-5.3%	-0.1%
Louisville (Jefferson County)	-0.9%		-1.9%	-1.0%	-2.9%		-3.4%	6.3%
Kansas City (Platte, Clay, Jackson Counties)	-0.8%		-1.7%	-1.1%	-1.3%		-3.6%	2.5%
United States	0.5%		-0.5%	-0.3%	-2.2%		-3.8%	1.4%

\*Because the classification system used to track employment by sector changed in 2001 from the Standard Industrial Classification (SIC) system to the North American Industrial Classification System (NAICS), direct comparison by sector is not possible for the pre- and post-2001 periods.

Actual employment numbers were not disclosed due to confidentiality restrictions for Louisville (2004-2010) and Kansas City (2009-2012 and 2014-2015).

Sources: Bureau of Economic Analysis, 2015; Strategic Economics, 2017.

**Figure VI-3.** Transportation, Warehousing, and Utilities Employment: Shelby County, Peer Regions, and the U.S., 1970-2000 and 2001-2015\*

Transportation, Warehousing, Wholesale, and Utilities Employment	SIC Classification				NAICS Classification			
	1970	1980	1990	2000	2001	2008	2011	2015
Memphis (Shelby County)	50,897	63,783	88,715	118,197	102,761	97,478	89,303	93,740
Cincinnati (Hamilton County)	62,564	63,558	73,595	75,597	54,960	46,674	43,168	45,393
Indianapolis (Marion, County)	56,461	59,618	74,742	96,901	83,565	74,853	70,387	76,005
Louisville (Jefferson County)	42,592	46,579	52,538	73,903	62,550	N/A	59,926	64,701
Kansas City (Platte, Clay, Jackson Counties)	76,233	74,931	77,630	81,990	56,296	54,829	N/A	N/A
United States	9,038,200	11,381,800	13,229,100	15,781,400	12,329,200	12,972,500	12,420,600	13,979,400
Percent of Total Employment	1970	1980	1990	2000	2001	2008	2011	2015
Memphis (Shelby County)	15%	14%	17%	19%	16%	15%	14%	14%
Cincinnati (Hamilton County)	13%	12%	12%	11%	8%	7%	7%	7%
Indianapolis (Marion, County)	13%	12%	12%	14%	12%	10%	10%	10%
Louisville (Jefferson County)	12%	12%	12%	14%	12%	N/A	11%	11%
Kansas City (Platte, Clay, Jackson Counties)	17%	15%	14%	13%	9%	9%	N/A	N/A
United States	10%	10%	10%	10%	7%	7%	7%	7%
Average Annual Percent Change	1970-80		1980-90	1990-2000	2001-2008		2008-11	2011-15
Memphis (Shelby County)	2.5%		3.9%	3.3%	-0.6%		-2.8%	1.2%
Cincinnati (Hamilton County)	0.2%		1.6%	0.3%	-1.9%		-2.5%	1.3%
Indianapolis (Marion, County)	0.6%		2.5%	3.0%	-1.3%		-2.0%	2.0%
Louisville (Jefferson County)	0.9%		1.3%	4.1%	N/A		N/A	2.0%
Kansas City (Platte, Clay, Jackson Counties)	-0.2%		0.4%	0.6%	-0.3%		N/A	N/A
United States	2.6%		1.6%	1.9%	0.7%		-1.4%	3.1%

\*Because the classification system used to track employment by sector changed in 2001 from the Standard Industrial Classification (SIC) system to the North American Industrial Classification System (NAICS), direct comparison by sector is not possible for the pre- and post-2001 periods.

Actual employment numbers were not disclosed due to confidentiality restrictions for Louisville (2004-2010) and Kansas City (2009-2012 and 2014-2015).

Sources: Bureau of Economic Analysis, 2015; Strategic Economics, 2017.

**Figure VI-4. Employment by Sector: Shelby County, Peer Regions, and the U.S., 2015**

	Memphis (Shelby County)	Cincinnati (Hamilton County)	Indianapolis (Marion, County)	Louisville (Jefferson County)	Kansas City (Platte, Clay, and Jackson Counties)	United States
<b>Non-Farm Employment</b>						
Health care, social assistance, and educational services	95,328	110,857	111,873	79,275	83,592	25,971,800
Administrative, support, waste management, remediation services	75,354	41,141	65,464	43,667	39,085	12,022,900
Government	68,258	58,693	83,577	51,023	82,391	24,142,000
Transportation, warehousing and utilities	61,997	17,042	44,716	38,860	N/A	7,193,800
Retail trade	61,674	50,601	59,743	51,842	64,241	19,149,000
Arts, accommodation, and food services	58,272	62,615	66,691	55,754	68,428	18,321,200
Finance, insurance, and real estate	49,414	64,074	63,128	66,818	66,708	18,372,900
Other services (except public administration)	47,167	29,548	41,056	26,688	36,187	11,036,200
Manufacturing	36,020	50,023	56,058	49,379	41,864	13,091,200
Professional, scientific, and technical services	33,801	53,460	50,796	36,026	57,560	13,242,900
Wholesale trade	31,743	28,351	31,289	25,841	26,676	6,785,600
Construction	25,912	29,147	34,720	26,720	32,524	9,948,900
Information	6,935	10,327	13,477	9,642	11,860	3,376,600
Management of companies	6,789	31,396	9,343	7,638	11,748	2,431,800
Agricultural services & Mining	1,213	914	956	981	N/A	2,466,600
Total Non-Farm Employment	659,877	638,189	732,887	570,154	651,669	187,553,400
Total Employment	660,434	638,641	733,201	570,618	653,527	190,195,400
<b>Percent of Total Employment</b>						
Health care, social assistance, and educational services	14%	17%	15%	14%	13%	14%
Administrative, support, waste management, remediation services	11%	6%	9%	8%	6%	6%
Government	10%	9%	11%	9%	13%	13%
Transportation, warehousing and utilities	9%	3%	6%	7%	N/A	4%
Retail trade	9%	8%	8%	9%	10%	10%
Arts, accommodation, and food services	9%	10%	9%	10%	10%	10%
Finance, insurance, and real estate	7%	10%	9%	12%	10%	10%
Other services (except public administration)	7%	5%	6%	5%	6%	6%
Manufacturing	5%	8%	8%	9%	6%	7%
Professional, scientific, and technical services	5%	8%	7%	6%	9%	7%
Wholesale trade	5%	4%	4%	5%	4%	4%
Construction	4%	5%	5%	5%	5%	5%
Information	1%	2%	2%	2%	2%	2%
Management of companies	1%	5%	1%	1%	2%	1%
Agricultural services & Mining	0%	0%	0%	0%	N/A	1%
Total Non-Farm Employment	100%	100%	100%	100%	100%	99%
Total Employment	100%	100%	100%	100%	100%	100%

N/A: Data not disclosed due to confidentiality restrictions.

Sources: Bureau of Economic Analysis, 2015; Strategic Economics, 2017.

## TARGET INDUSTRY CLUSTERS

Previous economic development strategies for the Memphis region have identified a set of target industry clusters.<sup>32</sup> These clusters are critical for driving the Memphis economy today, and are the focus of many of the region's existing economic development efforts, including the use of tax incentives to attract new businesses (discussed in Chapter VIII), other business recruitment and retention initiatives, and entrepreneurship and workforce development activities (discussed in Chapter VII).

**Figure VI-14** summarizes the key industry clusters, including specific target industries, existing geographic concentrations within the region, and opportunities and challenges for growth. Some of the key opportunities and challenges of each cluster are described briefly below. As discussed in more detail in Chapter VII, a shortage of labor (particularly skilled labor) is a challenge across industry sectors. This in part reflects the region's current low unemployment rate, but may also reflect a gap between employer requirements and the skills of the local workforce.

- **Transportation and logistics:** Transportation and logistics is the Memphis region's largest and most defining cluster. Within this cluster, the region specializes in express delivery services (anchored by FedEx), logistics (which manages the efficient movement of goods across different transportation modes), and wholesale (including most notably cotton wholesaling, but also other farm products, pharmaceuticals, apparel, auto parts, furniture, and wide range of other goods). The presence of FedEx supports thousands of jobs in the region in the support services (e.g., real estate, facilities support, repair and maintenance), while Memphis' strength as a distribution and logistics hub also helps make the region more attractive for other industries such as medical device manufacturing. The region's central location within the region and extensive air, water, freight rail, and highway infrastructure are key assets for this cluster. Regional economic development stakeholders, led by the Greater Memphis Chamber of Commerce, completed a comprehensive master plan for the Memphis Aerotropolis Airport City (defined as the area within a 25-mile radius of the airport) to further strengthen this cluster. The Greater Memphis Chamber has also established a Regional Logistics Council to bring together key players in the industry cluster.

Since 2001, however, the Memphis region's employment in the transportation and logistics cluster has declined slightly. Within the region, the Aerotropolis area has the greatest concentration of transportation and logistics employment, but new industrial development of all types is increasingly occurring outside the city in places with more greenfield sites (including DeSoto County and West Memphis). Nationally, transportation and logistics are becoming increasingly automated, suggesting that the need for transportation and warehousing space may continue to grow faster than employment in this cluster.

- **Manufacturing:** As discussed in the previous section, manufacturing accounts for a lower share of the Memphis economy compared to the national average, and employment in the sector has declined over several decades. Reflecting Memphis' long history as a trading hub for lumber and agricultural products, the region continues to specialize in paper manufacturing, grain and oilseed milling, wood products manufacturing, and food and beverage manufacturing. The region also has strengths in fabricated metals production, and the chemical industries. One of the fastest growing industries is medical device manufacturing, which is discussed in more detail below as part of the

<sup>32</sup> The primary sources for this discussion include: The Brookings Institution and EDGE, *Memphis & Shelby County Regional Economic Development Plan*, September 2014; Randall Gross/Development Economics, *Comprehensive Economic Development Strategy (CEDS)*, March 2017; and interviews with staff from the Greater Memphis Chamber of Commerce, Memphis Tomorrow, and EDGE.

health care, biosciences, life sciences, and medical technologies field. The Chamber of Commerce is focusing on expanding the region's advanced manufacturing industries.

Manufacturers in Memphis rely on the region's excellent transportation access and the availability of a high quality, low cost water source from the underground aquifer system. Within the region, new manufacturing development (like transportation and warehousing) is increasingly occurring outside the city boundaries. As discussed in Chapter VIII, many of the city's older manufacturing sites (concentrated in the Core City, South, and North subareas) do not meet the requirements of modern manufacturers, and reuse and redevelopment can be very expensive and time consuming, often involving environmental remediation, site infrastructure and utilities improvements, and parcel assembly.

- **Healthcare, biosciences, life sciences, and medical technologies:** Memphis' medical and education cluster is similar in size to other large metropolitan regions. However, the region stands out as having particular strengths in specialized medicine and medical technologies. The specialized medicine industry is anchored by St. Jude Children's Research Hospital and the other medical institutions clustered in the Medical District. The medical technologies segment includes the rapidly growing medical device manufacturing industry, research and development services related to medical technology and life sciences, and medical diagnostic laboratories. This cluster benefits in part from local logistics capabilities; for example, laboratories can easily do rapid testing of samples transportation from other parts of the country. There are a number of organizations and economic development efforts focused on supporting and growing this cluster, including the Memphis Bioworks Foundation, the Memphis Research Consortium, the Greater Memphis Medical Devices Council, and the Made in the Mid-South Manufacturing Alliance.
- **Management and business services:** Memphis has a number of existing corporate headquarters including FedEx, Servicemaster, Evergreen Packaging, Orgill, AutoZone, and International Paper. As discussed above, the city also has a concentration of administrative and support services (back office) employment. The Greater Memphis Chamber has targeted recruitment of corporate headquarters, home offices, and call centers. Major challenges for office recruitment include workforce preparedness, negative perceptions of crime in Memphis, and limited passenger service to Memphis International Airport.
- **Tourism:** Memphis is a major destination for tourism, with major visitor attractions including Graceland, National Civil Rights Museum, Beale Street, and Stax Museum. The city is currently experiencing a boom in hotel construction. The Memphis Convention and Visitors Bureau is working to expand Memphis' draw for conventions, and particularly working to attract more large, full-service hotels with meeting space.

**Figure VI-5.** Target Industry Clusters for Current Memphis Economic Development Efforts

Target Industry Clusters	Specific Target Industries	Existing Geographic Concentrations within the Region	Opportunities for Growth	Challenges for Growth
<b>Transportation and Logistics</b>	<ul style="list-style-type: none"> <li>• Couriers and express delivery services</li> <li>• Other farm product raw material merchant (cotton)</li> <li>• Transportation services</li> <li>• Merchant wholesalers and transportation services</li> </ul>	<ul style="list-style-type: none"> <li>• Memphis International Airport Area/Aerotropolis (I-55/69 &amp; I-240 corridors)</li> <li>• DeSoto County, MS</li> <li>• West Memphis</li> </ul>	<ul style="list-style-type: none"> <li>• Central location in the U.S.</li> <li>• Transportation assets (airport, port, freeways, rail)</li> <li>• Recognition of Memphis as a global center for transportation and logistics</li> <li>• Aerotropolis Initiative and associated investments in airport-related infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Logistics cluster becoming more automated</li> <li>• Competition with other regions (e.g., Indianapolis)</li> <li>• Within the region, industrial development is increasingly occurring outside the city in places with more greenfield sites</li> <li>• Tight labor market</li> </ul>
<b>Manufacturing</b>	<ul style="list-style-type: none"> <li>• Food and agricultural products</li> <li>• Metals</li> <li>• Electronics assembly, repair, and manufacturing</li> <li>• Advanced manufacturing</li> <li>• Medical equipment and supplies</li> <li>• Automotive parts and equipment</li> <li>• Green industries (e.g., solar energy)</li> <li>• Aerospace</li> <li>• Exports and international business</li> </ul>	<ul style="list-style-type: none"> <li>• Memphis International Airport Area/Aerotropolis (I-55/69 &amp; I-240 corridors)</li> <li>• Memphis Port Area</li> <li>• West Memphis Port Area</li> <li>• More rural areas of the region (where land is lower cost)</li> </ul>	<ul style="list-style-type: none"> <li>• Transportation assets (airport, port, freeways, rail)</li> <li>• Aerotropolis Initiative and associated investments in airport-related infrastructure</li> <li>• Water quality and availability</li> <li>• Recent users opening or expanding new facilities include Electrolux, Mitsubishi, and Nike</li> </ul>	<ul style="list-style-type: none"> <li>• Reuse and redevelopment of older industrial sites is challenging</li> <li>• Within the region, industrial development is increasingly occurring outside the city in places with more greenfield sites</li> <li>• Shortage of skilled labor</li> </ul>
<b>Healthcare, biosciences, life sciences, and medical technologies</b>	<ul style="list-style-type: none"> <li>• Medical equipment and supplies manufacturing</li> <li>• Biosciences, biotechnology, and medical R&amp;D</li> <li>• Bioscience and healthcare information technology</li> </ul>	<ul style="list-style-type: none"> <li>• Core City (Midtown and Medical District)</li> <li>• Memphis International Airport Area/Aerotropolis (for medical equipment manufacturing)</li> </ul>	<ul style="list-style-type: none"> <li>• Existing cluster of major medical institutions</li> <li>• Existing strengths in specialized medicine, medical equipment manufacturing, life sciences research</li> </ul>	<ul style="list-style-type: none"> <li>• Concerns about the rate at which research is translating into business development</li> <li>• Shortage of skilled labor</li> </ul>

Target Industry Clusters	Specific Target Industries	Existing Geographic Concentrations within the Region	Opportunities for Growth	Challenges for Growth
<b>Management and business services</b>	<ul style="list-style-type: none"> <li>Corporate offices</li> <li>Call centers</li> </ul>	<ul style="list-style-type: none"> <li>East Memphis</li> <li>Core City</li> <li>385 Office Corridor (Memphis Technology Corridor)</li> </ul>	<ul style="list-style-type: none"> <li>Urban amenities in the Downtown are drawing new interest (e.g., recent Servicemaster move)</li> <li>Existing corporate headquarters include FedEx, Servicemaster, Evergreen Packaging, Orgill, AutoZone, International Paper</li> <li>Existing strength in administrative and support services</li> </ul>	<ul style="list-style-type: none"> <li>Shortage of skilled labor</li> <li>Negative perception around crime, poverty, and other issues</li> <li>Office-based employment is relatively dispersed, making it difficult to create a critical mass to support restaurants and other amenities</li> <li>Competition with other cities (Louisville, Nashville, etc.)</li> </ul>
<b>Tourism</b>	<ul style="list-style-type: none"> <li>Conventions</li> <li>Music, film, media, and tourism</li> </ul>	<ul style="list-style-type: none"> <li>Core City</li> </ul>	<ul style="list-style-type: none"> <li>Major tourist concentrations including Graceland, National Civil Rights Museum, Beale Street, Sun Studio and Stax Museum, etc.</li> <li>Central location in the U.S. and transportation assets</li> <li>Memphis Cook Convention Center</li> <li>Significant planned hotel development</li> </ul>	<ul style="list-style-type: none"> <li>Lack of large hotels suitable for conventions</li> <li>Lack of mass transit</li> <li>Shortage of skilled labor</li> </ul>

Sources: CEDS; Strategic Economics

## MEMPHIS EMPLOYMENT OUTLOOK

The following figures show:

- Short-term (2014-2024) employment projections for Shelby and Fayette Counties, from the Tennessee Department of Labor and Workforce Development (**Figure VI-11**).
- Medium-term (2015-2040) employment projections for Shelby County, from the RCLCO market study (**Figure VI-12**).
- Long term (2017-2050) employment projections for Shelby County, by the private economic projections firm Woods & Poole Economics, Inc. (**Figure VI-13**).

**In general, the projections assume that recent trends will continue.** The different projections are not directly comparable, since they cover different time periods and are based on different methodologies. However, all of the projections are based to some extent on a continuation of historic trends. A few key takeaways emerge from all the projections:

- **Health care, social assistance, and educational services** are expected to account for the greatest amount of job growth, consistent with past trends.
- **Professional and business services** (including administrative and support services, professional, scientific and technical services and management of companies) are also expected to continue to grow faster than other sectors.
- The rate of growth in **transportation and warehousing** will be low relative to the rest of the economy. In part, this may reflect the expectation that the industry will become increasingly automated, and require fewer workers even as there continues to be demand for space.
- **Retail and accommodation and food services** are generally expected to grow moderately.
- **Manufacturing employment** is projected to continue to decline.

**Future industry trends will have important implications for job quality for Memphis residents, and for commercial land use and investment decisions.** As discussed in the following chapter (Chapter VII), the growing industries are expected to generate a variety of employment opportunities in coming years, including many low-wage, low-skilled jobs. The implications for future land use demand and commercial investment are less clear. Memphis has a large inventory of vacant and obsolete industrial, office, and retail space, as well as many brownfield sites and other vacant land. The extent to which employment growth will translate into new investment in Memphis depends in part on the relative value and cost associated with redeveloping existing properties in the city, compared to building on greenfield sites in other parts of the region. The potential for reuse and redevelopment is discussed in more detail in Chapter VIII.

**Figure VI-6.** Short-Term Employment Projections: Shelby and Fayette Counties, 2014-2024 (Tennessee Department of Labor and Workforce Development)

<b>Sector</b>	<b>2014 Estimated Employment</b>	<b>2024 Projected Employment</b>	<b>2014-2024 Projected Change</b>	<b>Annual Average Change</b>	<b>Average Annual Growth Rate</b>
Health care, social assistance, and educational services	106,480	131,660	25,180	2,518	2.4%
Administrative, support, waste management, remediation services	55,250	72,060	16,810	1,681	3.0%
Professional, scientific, and technical services	18,210	26,410	8,200	820	4.5%
Management of companies	6,170	11,980	5,810	581	9.4%
Transportation, warehousing and utilities	55,110	58,600	3,490	349	0.6%
Wholesale trade	26,750	30,060	3,310	331	1.2%
Other services (except public administration)	22,340	25,220	2,880	288	1.3%
Retail trade	50,960	53,400	2,440	244	0.5%
Finance, insurance, and real estate	22,960	25,270	2,310	231	1.0%
Construction	16,570	18,510	1,940	194	1.2%
Information	5,220	5,550	330	33	0.6%
Manufacturing	35,560	35,300	-260	-26	-0.1%
Public Administration	32,770	32,260	-510	-51	-0.2%
Arts, accommodation, and food services	45,590	44,840	-750	-75	-0.2%
Agricultural Services & Mining	Confidential	Confidential	N/A	N/A	N/A
<b>Total</b>	<b>528,610</b>	<b>603,010</b>	<b>74,400</b>	<b>7,440</b>	<b>1.4%</b>

Excludes government, self-employed workers, and unclassified establishments.

Source: TN Dept. of Labor & Workforce Dev, Div. Emp Sec, LMI; Strategic Economics, 2017.

**Figure VI-7.** Medium-Term Employment Projections: Shelby County, 2015-2040 (RCLCO)

	<b>Average Annual Growth, 2015-2040</b>	
	<b>Number of Jobs</b>	<b>Percent Growth</b>
Education & Health	960	1.1%
Professional & Business Services	896	1.0%
Leisure & Hospitality	882	1.6%
Trade, Transportation, & Utilities	228	0.2%
Construction	200	1.1%
Other Services	60	0.4%
Financial Activities	54	0.2%
Information	8	0.2%
Natural Resources	-7	-5.1%
Manufacturing	-88	-0.3%
Government	-181	-0.3%
<b>Total</b>	<b>3,011</b>	<b>0.6%</b>

Source: RCLCO, 2017.

**Figure VI-8.** Long-Term Employment Projections: Shelby County, 2017-2050 (Woods & Poole Economics, Inc.)

<b>Sector</b>	<b>2017 Estimated Employment</b>	<b>2050 Projected Employment</b>	<b>2017-2050 Projected Change</b>	<b>Annual Average Change</b>	<b>Average Annual Growth Rate</b>
Health care, social assistance, and educational services	99,437	170,878	71,441	2,165	2.2%
Other services (except public administration)	49,304	97,423	48,119	1,458	3.0%
Administrative, support, waste management, remediation services	76,686	103,489	26,803	812	1.1%
Finance, insurance, and real estate	50,964	69,878	18,914	573	1.1%
Professional, scientific, and technical services	34,495	48,608	14,113	428	1.2%
Government	69,555	83,332	13,777	417	0.6%
Arts, accommodation, and food services	59,139	71,837	12,698	385	0.7%
Transportation, warehousing and utilities	58,098	70,366	12,268	372	0.6%
Retail trade	63,518	75,404	11,886	360	0.6%
Construction	26,917	33,428	6,511	197	0.7%
Management of companies	6,962	9,390	2,428	74	1.1%
Wholesale trade	32,305	33,713	1,408	43	0.1%
Information	6,992	7,500	508	15	0.2%
Agricultural Services & Mining	1,230	1,528	298	9	0.7%
Manufacturing	36,306	28,612	-7,694	-233	-0.6%
<b>Total</b>	<b>671,908</b>	<b>905,386</b>	<b>233,478</b>	<b>7,075</b>	<b>1.1%</b>

Source: Woods & Poole Economics, Inc.; Strategic Economics, 2017.

## VII. JOB ACCESS, WORKFORCE DEVELOPMENT, AND ENTREPRENEURSHIP

This chapter describes the opportunities and barriers for Memphis' residents to access employment opportunities and start or expand small businesses, as well as the existing organizations and initiatives set up to support workforce development, entrepreneurship, and small business development. The following analysis incorporates findings from a variety of previous studies,<sup>33</sup> as well as new analysis.

### JOB ACCESS

**The education levels of Memphis residents have increased significantly over the past decade and half, although overall educational attainment remains low compared to national averages and peer cities.** Between 2000 and 2015, the share of the city's population with less than a high school degree decreased by 28 percent, while the share with a bachelor's degree or higher increased by 21 percent. Despite the increase in educational attainment, Memphis still had a relatively smaller share of college-educated workers compared in the U.S. as a whole in 2015 (**Figure VII-1**). Memphis' educational attainment is also relatively low compared to peer cities like Kansas City, St. Louis, Cincinnati, and Louisville.<sup>34</sup>

**The regional unemployment rate has also decreased dramatically since the recession.** The unemployment rate for the nine-county Memphis region has decreased from approximately 12 percent at the height of the recession in 2010, to just under 4 percent as of September 2017. Current unemployment statistics are not available for the city of Memphis, but as of 2016 (most recent data available), the Memphis unemployment rate was 8.5 percent compared to about 6 percent for the nine-county region.

**Despite these gains, average wages remain low.** As of 2014, only 57 percent of Memphis workers earned at least \$15 an hour, compared to 70 percent of U.S. workers.<sup>35</sup> The median wage for workers in the Shelby County/Fayette County workforce area was \$34,500 in 2016, compared to \$37,040 nationally.<sup>36</sup> **Figure VII-5** shows the top 20 occupations by number of jobs in the Shelby County/Fayette County workforce area in 2016, including the median wage and typical education requirement. Most of these jobs require no more than a high school degree, and pay less than \$30,000 a year on average. Reflecting the importance of the health care, administration and support, transportation and warehousing, retail, and food services sectors to the economy, some of top jobs include: laborers and freight movers, retail salespersons, stock clerks and order fillers, registered nurses, truck drivers, cashiers, and food preparation workers.

**Lower-paying, lower-skilled jobs are also expected to account for much of the job growth in coming years.** **Figure VII-6** shows the twenty occupations expected to add the most jobs in the Shelby

<sup>33</sup> Key sources include Randall Gross/Development Economics, "Part 1: Background & Target Industry Report," *Comprehensive Economic Development Strategy (CEDS)*;

<sup>34</sup> Randall Gross/Development Economics, "Part 1: Background & Target Industry Report," *Comprehensive Economic Development Strategy (CEDS)*; Younger Associates, "2016 Strategic Sector Workforce Analysis," prepared for Greater Memphis Alliance for a Competitive Workforce, October 2016; and City of Memphis, *Workforce and Economic Development Research Report*, prepared for Memphis 3.0, 2017.

<sup>35</sup> IPUMS; PolicyLink/PERE National Equity Atlas, [www.nationalequityatlas.org](http://www.nationalequityatlas.org).

<sup>36</sup> Sources: Tennessee Department of Labor and Bureau of Labor Statistics, 2016. Note that some workers may work more than one job, so these numbers do not represent total income.

County/Fayette County workforce area between 2014 and 2016. This presents a challenge for improving the job quality and pay in the region.

**Significant disparities in education, unemployment, and earnings by race and neighborhood exist within the city.** Figures VII-2 and VII-3 show, respectively, the unemployment rate in 2014<sup>37</sup> and the share of workers making \$15 an hour or more by race and ethnicity. Figure VII-4 shows the share of population with a Bachelor's degree or higher by Census Tract. In general, highly educated residents are concentrated in Downtown and north along the Waterfront; along the Poplar Avenue corridor in Core City, Mid City, and East; and in Cordova and other eastern suburban communities. Many other neighborhoods have low levels of educational attainment.

**There are many challenges facing low-income job seekers in Memphis.** These include:

- **Skills Gaps:** Previous studies have also found that many of the unemployed job seekers in Memphis lack the skills needed to fill available job offerings, including “soft” skills (like communication, team work, and customer service) as well as specific technical skills.<sup>38</sup>
- **Accessibility challenges for workers:** There is a mismatch between where many low-income and unemployed residents live, and where the job opportunities are located. This challenge is compounded by the fact that existing transit access in many low-income communities is very limited, and the existing transit system does not serve many employment centers, especially in the southern and eastern parts of the city. In 2016 survey of unemployed and underemployed Memphians, 64 percent said they would need public transportation or ridesharing to get to work.<sup>39</sup> A lack of frequent, reliable transit can also make it difficult for workers without a vehicle to arrive at work on time, or to get to jobs with irregular, late night, or early morning hours.
- **Lack of access to other resources:** In addition to this skills gap and lack of transportation, other reasons that Memphis residents may not be able to find jobs include difficulty finding work with appropriate hours/schedule, lack of child care, disability, and lack of knowledge about existing job training and placement resources.<sup>40</sup>

**Many industries are struggling to fill positions.** A series of employer focus groups organized GMACW in 2016 identified a range of positions for which employers are struggling to recruit and retain qualified workers.<sup>41</sup> To some extent, this reflects the current low unemployment rate, which is creating similar challenges for employers in many regions of the country. The labor shortage included both lower-skilled, lower-paying positions such as forklift operators, as well as higher-skilled, higher-paying jobs including:

- Customer service representatives in the IT, logistics, manufacturing, and financial sectors.
- IT professionals with programming skills.
- Machinists in the medical device manufacturing and advanced and general manufacturing sectors.
- Specialized mechanics and equipment technicians.
- First-line supervisors
- Architects and engineers.
- Bankers, credit analysts, and financial analysts.

<sup>37</sup> Note that as described above, the overall unemployment rate has decreased significantly since 2014.

<sup>38</sup> Younger Associates, “2016 Strategic Sector Workforce Analysis,” prepared for Greater Memphis Alliance for a Competitive Workforce, October 2016.

<sup>39</sup> Ibid.

<sup>40</sup> Ibid.

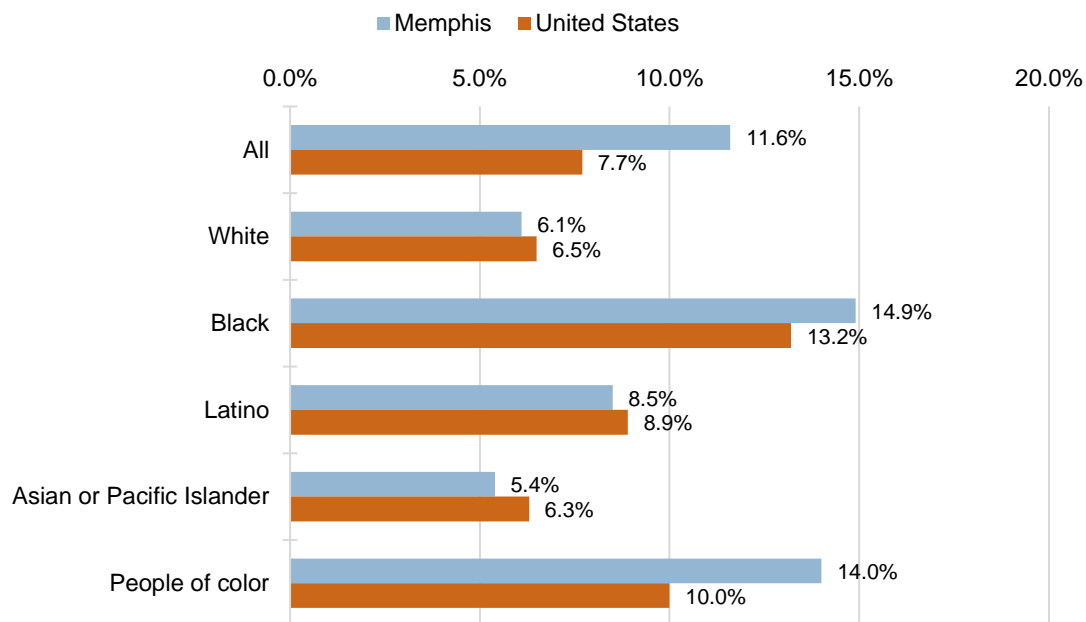
<sup>41</sup> Ibid.

**Figure VII-1. Educational Attainment for the Population 25 and Over: City of Memphis, 2000-2015**

	<b>2000</b>		<b>2015</b>		<b>Change, 2000-2015</b>	
	<b>Population</b>	<b>% of Total</b>	<b>Population</b>	<b>% of Total</b>	<b>Population</b>	<b>% Change</b>
<b>City of Memphis</b>						
Less than High School	94,312	24%	67,804	16%	-26,508	-28%
High School or Equivalent Degree	111,364	28%	123,564	30%	12,200	11%
Some College	109,929	28%	120,727	29%	10,798	10%
Bachelor's Degree and Above	83,219	21%	104,937	25%	21,718	26%
<b>Total Population 25 Years and Over</b>	<b>398,824</b>	<b>100%</b>	<b>417,032</b>	<b>100%</b>	<b>18,208</b>	<b>5%</b>
<b>United States</b>						
Less than High School	35,715,625	20%	28,229,094	13%	-7,486,531	-21%
High School or Equivalent Degree	52,168,981	29%	58,722,528	28%	6,553,547	13%
Some College	49,864,428	27%	61,558,628	29%	11,694,200	23%
Bachelor's Degree and Above	44,462,605	24%	62,952,272	30%	18,489,667	42%
<b>Total Population 25 Years and Over</b>	<b>182,211,639</b>	<b>100%</b>	<b>211,462,522</b>	<b>100%</b>	<b>29,250,883</b>	<b>16%</b>

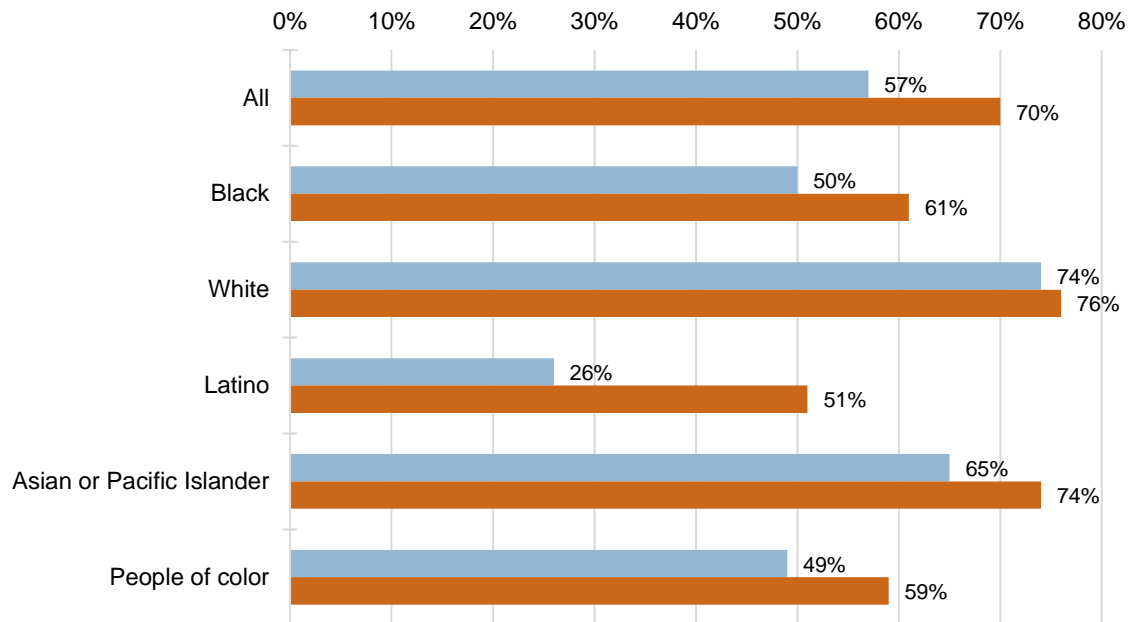
Sources: U.S. Decennial Census, 2000; American Community Survey 5-Year Estimates, 2011-2015; Social Explorer, 2017; Strategic Economics, 2017.

**Figure VII-2. Unemployment Rate by Race and Ethnicity: Memphis vs. U.S., 2014**



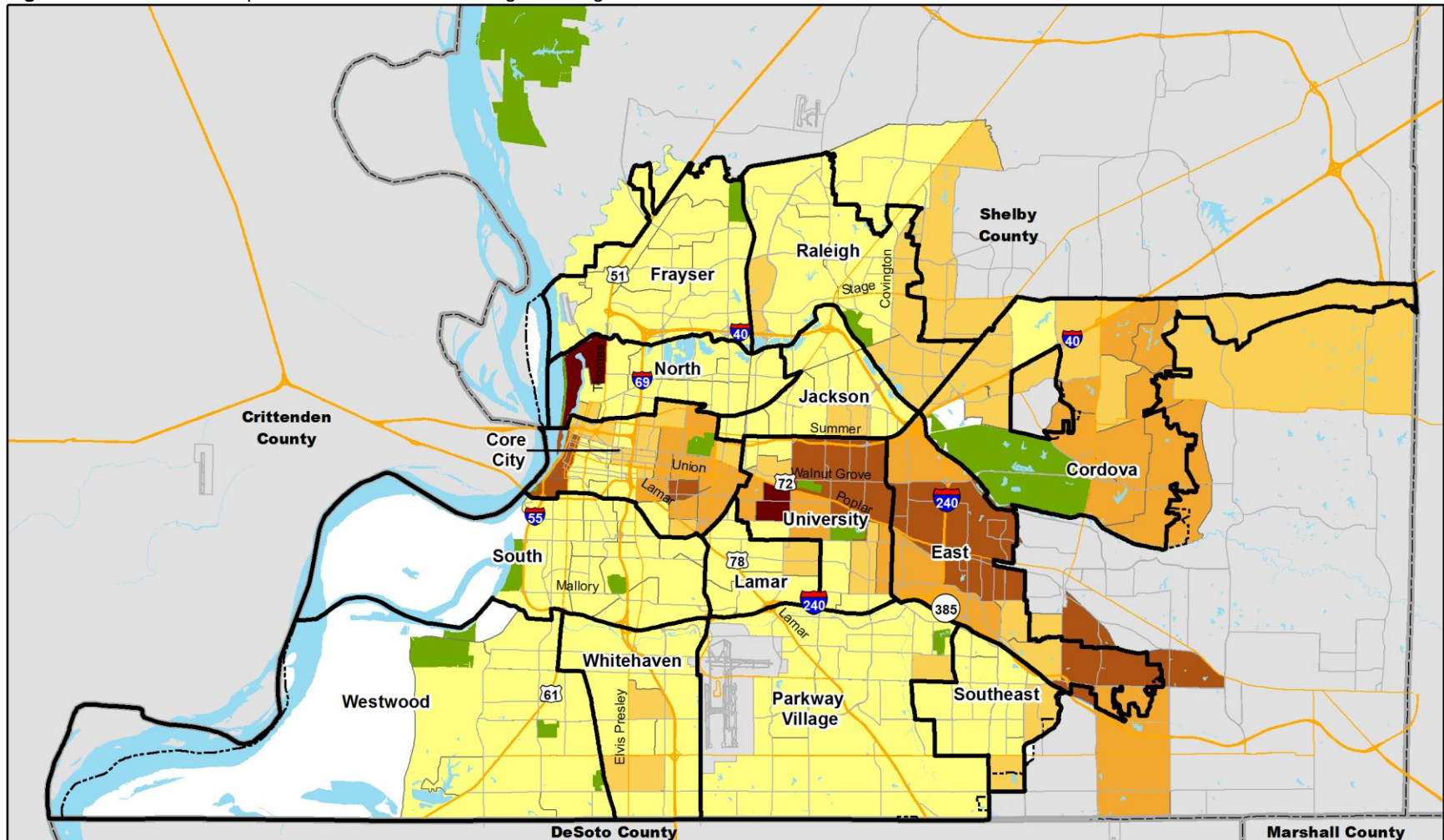
Note that the overall unemployment rate in Memphis and the U.S. have decreased significantly since 2014.  
Source: IPUMS; PolicyLink/PERE National Equity Atlas, [www.nationalequityatlas.org](http://www.nationalequityatlas.org).

**Figure VII-3. Share of Workers Earning at Least \$15 an Hour by Race and Ethnicity: Memphis vs. U.S., 2014**  
 ■ Memphis ■ United States



Source: IPUMS; PolicyLink/PERE National Equity Atlas, [www.nationalequityatlas.org](http://www.nationalequityatlas.org).

**Figure VII-4. Percent of Population with a Bachelor's Degree or Higher**



**Percent of the Population with a Bachelor's Degree or Higher**



Sources: American Community Survey 5-Year Estimates, 2011-2015; Strategic Economics, 2017.



**Figure VII-5. Top 20 Occupations by Employment: Shelby and Fayette Counties, 2016**

<b>Occupation</b>	<b>2016 Employment</b>	<b>2016 Median Wages</b>	<b>Typical Education Level Required</b>
Laborers and Freight, Stock, and Material Movers, Hand	36,400	\$26,651	High School Diploma or Equivalent
Retail Salespersons	14,790	\$22,749	High School Diploma or Equivalent
Stock Clerks and Order Fillers	12,860	\$24,601	High School Diploma or Equivalent
Registered Nurses	12,070	\$63,444	Bachelor's Degree
Heavy and Tractor-Trailer Truck Drivers	11,530	\$44,157	Postsecondary non-degree award
Cashiers	11,240	\$19,040	High School Diploma or Equivalent
Combined Food Preparation and Serving Workers, Including Fast Food	10,580	\$18,372	High School Diploma or Equivalent
Office Clerks, General	9,970	\$30,952	High School Diploma or Equivalent
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	8,990	\$33,511	High School Diploma or Equivalent
Customer Service Representatives	8,620	\$32,974	High School Diploma or Equivalent
General and Operations Managers	7,890	\$90,920	Bachelor's Degree
Security Guards	7,680	\$21,659	High School Diploma or Equivalent
Waiters and Waitresses	6,730	\$18,137	High School Diploma or Equivalent
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	6,460	\$21,622	High School Diploma or Equivalent
First-Line Supervisors of Office and Administrative Support Workers	5,750	\$54,454	High School Diploma or Equivalent
Helpers--Production Workers	5,380	\$21,771	High School Diploma or Equivalent
Industrial Truck and Tractor Operators	5,260	\$28,571	High School Diploma or Equivalent
Elementary School Teachers, Except Special Education	4,740	\$55,439	Bachelor's Degree
Nursing Aides, Orderlies, and Attendants	4,620	\$26,039	High School Diploma or Equivalent
Bookkeeping, Accounting, and Auditing Clerks	4,610	\$38,061	High School Diploma or Equivalent

Note: the 20 occupations shown in this table represented 38 percent of estimated employment in the two-county workforce area as of 2016.

Source: TN Dept. of Labor & Workforce Dev, Div. Emp Sec, LMI, 2017; Strategic Economics, 2017.

**Figure VII-6. Fastest Growing Occupations: Shelby and Fayette Counties, 2014 and 2024\***

<b>Occupation</b>	<b>2014-2024 Projected Employment Change</b>	<b>Percent Change</b>	<b>2014 Estimated Employment</b>	<b>2024 Projected Employment</b>	<b>2016 Median Wages</b>	<b>Typical Education Level Required</b>
Laborers and Freight, Stock, and Material Movers, Hand	5,350	18%	30,300	35,650	\$26,651	High School Diploma or Equivalent
Registered Nurses	3,360	32%	10,430	13,790	\$63,444	Bachelor's Degree
Security Guards	1,860	24%	7,880	9,740	\$21,659	High School Diploma or Equivalent
Personal Care Aides	1,820	54%	3,350	5,170	\$18,507	High School Diploma or Equivalent
Customer Service Representatives	1,790	21%	8,400	10,190	\$32,974	High School Diploma or Equivalent
Industrial Truck and Tractor Operators	1,520	26%	5,920	7,450	\$28,571	High School Diploma or Equivalent
Office Clerks, General	1,410	14%	9,870	11,280	\$30,952	High School Diploma or Equivalent
Maids and Housekeeping Cleaners	1,300	31%	4,240	5,540	\$20,364	High School Diploma or Equivalent
Stock Clerks and Order Fillers	1,250	14%	8,970	10,220	\$24,601	High School Diploma or Equivalent
General and Operations Managers	1,220	16%	7,440	8,650	\$90,920	Bachelor's Degree
Nursing Aides, Orderlies, and Attendants	1,220	29%	4,160	5,380	\$26,039	High School Diploma or Equivalent
Heavy and Tractor-Trailer Truck Drivers	1,140	11%	10,460	11,610	\$44,157	Postsecondary non-degree award
Home Health Aides	1,140	45%	2,540	3,680	\$20,720	High School Diploma or Equivalent
Computer Systems Analysts	1,040	55%	1,890	2,930	\$72,686	Bachelor's Degree
Secretaries and Administrative Assistants**	970	12%	8,360	9,330	\$33,511	High School Diploma or Equivalent
First-Line Supervisors of Office and Admin Support Workers	920	18%	5,190	6,110	\$54,454	High School Diploma or Equivalent
Retail Salespersons	860	6%	14,920	15,780	\$22,749	High School Diploma or Equivalent
Medical Assistants	840	36%	2,320	3,160	\$29,444	Postsecondary non-degree award
Accountants and Auditors	800	32%	2,470	3,270	\$59,841	Bachelor's Degree
Licensed Practical and Licensed Vocational Nurses	790	34%	2,320	3,120	\$41,826	Postsecondary non-degree award

\*Based on projections for the 2014-2024 period; note that for some occupations, job growth between 2014 and 2016 exceeded projections for the 2014-2024 period.

\*\*Except Legal, Medical, and Executive

Note: the 20 occupations shown in this table represent 41 percent of projected employment growth in the two-county workforce area for the 2014-2024 period.

Source: TN Dept. of Labor & Workforce Dev, Div. Emp Sec, LMI, 2017; Strategic Economics, 2017.

## SMALL BUSINESSES AND ENTREPRENEURSHIP

Economic development organizations and business leaders have identified the need to create more opportunities for entrepreneurship in an effort to diversify the economy and create more equal access to opportunity for women and people of color. Small, locally owned businesses may also have the potential to anchor local commercial districts, and expand the availability of goods, services, and jobs in low-income communities. This section describes the existing ecosystem of small businesses in Memphis,

**Most of the firms in Memphis are micro or small businesses.** Figure VII-7 shows the number of small and micro businesses in Shelby County, by industry.<sup>42</sup> Using definitions established by the U.S. Small Business Administration, micro businesses are defined as firms employing 1-9 workers; small businesses as employing 10-19 workers. Of the approximately 19,000 businesses employing at least one worker in Shelby County in 2015, 12,400 (64 percent) were micro businesses, and another 2,800 (15 percent) were small businesses.

**Industry sectors with the most small and micro businesses include:**

- **Retail** of all types.
- **Finance, insurance, and real estate**, including insurance agencies, janitorial and other building services, and real estate leasing agencies and brokerages.
- **Health care**, including doctors, dentists, and other small medical offices.
- **Other services**, including religious organizations and personal services (e.g., hair and nail care).
- **Professional, technical, and scientific services**, including law, accounting, and consulting firms.
- **Arts, accommodation, and food services.** Restaurants account for the majority of small and micro businesses in this category.

**Compared to the U.S. as a whole, small and micro businesses account for a smaller share of the businesses in Shelby County.** Small and micro businesses account for 79 percent of all businesses in Shelby County, compared to 86 percent nationwide. Compared to the national average, some of the sectors with especially low shares of small businesses include: transportation and warehousing; arts, accommodation and food services; administrative and support services; construction; wholesale trade; and manufacturing (Figure VII-8).

**Within Memphis, micro businesses make up the highest share of businesses in zip codes in Frayser, North, Jackson, University, and Cordova.** Figure VII-9 shows the number of micro businesses by zip code. Figure VII-10 shows micro businesses as a percent of all businesses in each zip code. (Note that some of the zip codes shown fall partially outside the city boundaries.)

**In addition to these small and micro businesses, there are many thousands of self-employed people in Memphis.** The Census Bureau's 2012 Survey of Business Owners and Self-Employed Persons<sup>43</sup> found that there were roughly 70,000 total firms in the city of Memphis, of which 60,000 (or 85 percent) had no employees.<sup>44</sup> Within this count, it is impossible to know how many are potential entrepreneurs with the potential to scale up and hire new workers, and how many are self-employed individuals who are unlikely to grow their business.

<sup>42</sup> Using data from the These data are only available at the County and Zip Code levels.

<sup>43</sup> The Survey of Business Owners and Self-Employed Persons includes all businesses filing tax forms with the Internal Revenue Service as individual proprietorships, partnerships, or any type of corporation, and with receipts of \$1,000 or more.

<sup>44</sup> For comparison, the same survey 80 percent of firms in the U.S. had no employees.

**Previous studies have shown that businesses owned by women and people of color face substantial disparities in access to the resources that help entrepreneurs grow their businesses.** A 2016 study for the City of Memphis found that women and minority owned businesses in the city face significant disparities in access to City contracts, with specific barriers including lack of access to credit, lack of access to informal networks, and the costs of doing business with the City (including the cost of certification and onerous insurance requirements).<sup>45</sup> These findings correspond with national studies showing that women and people of color face barriers in starting up and growing businesses.<sup>46</sup> As discussed below, the City and several partner organizations have created initiatives to address these challenges.

<sup>45</sup> Griffin & Strong PC, *2016 Disparity Study*, prepared for the City of Memphis, August 2016.

<sup>46</sup> See discussion in City of Memphis, *Workforce and Economic Development Research Report*, prepared for Memphis 3.0, 2017.

**Figure VII-7. Small and Micro Businesses by Sector: Shelby County, 2015**

	<b>Micro Businesses (1 - 9 employees)</b>	<b>Small Businesses (10 - 19 employees)</b>	<b>Total, Small and Micro Businesses</b>	<b>All Businesses with One or more Workers</b>	<b>Small and Micro Businesses as a % of All Businesses</b>
Retail Trade	2,093	492	2,585	3,043	85%
Finance, Insurance, Real Estate	1,914	237	2,151	2,341	92%
Health Care, Social Assistance, and Educational Services	1,557	427	1,984	2,545	78%
Other Services (except public administration)	1,348	254	1,602	1,818	88%
Professional, Scientific, and Technical Services	1,339	196	1,535	1,717	89%
Arts, Accommodation, and Food Service	708	396	1,104	1,909	58%
Wholesale Trade	779	209	988	1,292	76%
Construction	708	170	878	1,086	81%
Administrative, Support, Waste Management, Remediation Services	696	141	837	1,172	71%
Transportation, Warehousing and Utilities	560	141	701	1,010	69%
Manufacturing	246	92	338	546	62%
Management of Companies	241	58	299	477	63%
Information	188	44	232	299	78%
Unclassified	39	1	40	40	100%
Agriculture and Mining	14	1	15	16	94%
<b>Total</b>	<b>12,430</b>	<b>2,859</b>	<b>15,289</b>	<b>19,311</b>	<b>79%</b>

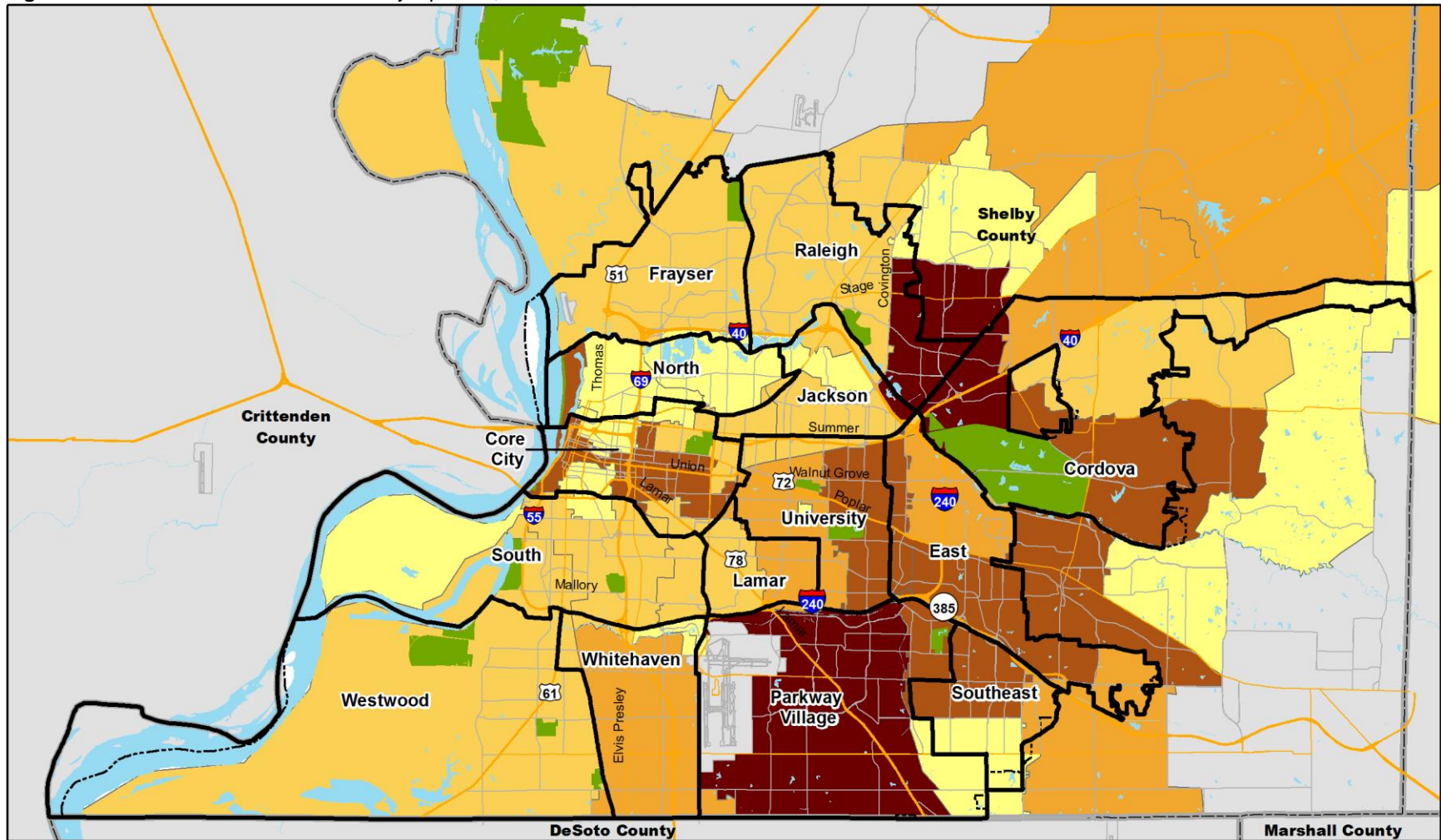
Sources: County Business Patterns, 2015; Strategic Economics, 2017.

**Figure VII-8: Small and Micro Businesses as a Percent of All Businesses: Shelby County and the United States, 2015**

	<b>Shelby County</b>	<b>United States</b>
Retail Trade	85%	85%
Finance, Insurance, Real Estate	92%	93%
Health Care, Social Assistance, and Educational Services	78%	83%
Other Services (except public administration)	88%	93%
Professional, Scientific, and Technical Services	89%	92%
Arts, Accommodation, and Food Service	58%	72%
Wholesale Trade	76%	85%
Construction	81%	91%
Administrative, Support, Waste Management, Remediation Services	71%	84%
Transportation, Warehousing and Utilities	69%	82%
Manufacturing	62%	69%
Management of Companies	63%	64%
Information	78%	81%
Unclassified	100%	100%
Agriculture and Mining	94%	85%
<b>Total</b>	<b>79%</b>	<b>86%</b>

Sources: County Business Patterns, 2015; Strategic Economics, 2017.

**Figure VII-9. Number of Micro Businesses by Zip Code, 2015**



**Micro Businesses (1 to 9 Employees), by Zip Code**

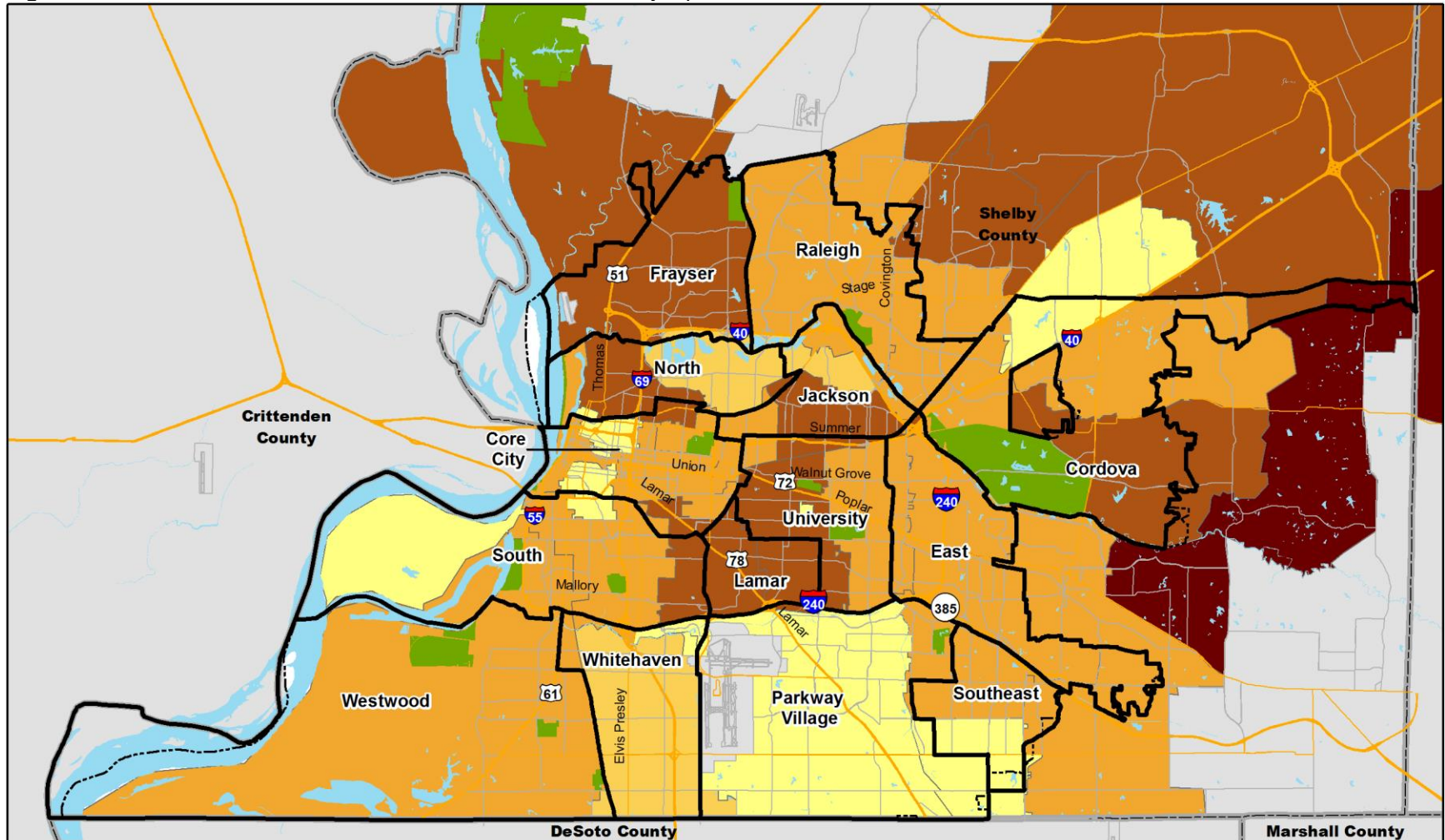


Sources: County Business Patterns, 2015; Strategic Economics, 2017.

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**Figure VII-10. Micro Businesses as a Percent of All Businesses by Zip Code, 2015**



**Micro Businesses (1 to 9 Employees) as a Percent of All Businesses, by Zip Code**



Sources: County Business Patterns, 2015; Strategic Economics, 2017.

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## **WORKFORCE DEVELOPMENT AND ENTREPRENEURSHIP ORGANIZATIONS AND INITIATIVES**

This section provides an overview of existing organizations and initiatives dedicated to supporting workforce development, entrepreneurship, and small businesses development, and concludes with key findings about Memphis' workforce and small business development systems.

### **Workforce Development**

Workforce development involves multiple actors at the national, state, regional, and local levels. Coordinating actions between all these players is one of the major challenges for delivering effective workforce training. The programs provided by workforce partners include those authorized by the federal Workforce Innovation and Opportunity Act of 2014 (WIOA), as well as Department of Labor grants. Many other workforce development activities are primarily funded by private employers and/or philanthropic organizations. Partnerships that pool funds from multiple sources are common in Memphis. The following highlights some of the key organizations and initiatives in the city. It is not a comprehensive list of every program or organization dedicated to workforce development and small business development.

#### **WIN**

The Workforce Investment Network (WIN) oversees the planning and operation of programs required and funded by the WIOA. WIN's service area includes Memphis, Shelby County, and Fayette County (LWDA13). Historically, WIN's activities have been focused on connecting job seekers with services to connect them to job openings in the region. In accordance with the WIOA, many of these services are provided through "one-stop" centers. WIN currently maintains four centers, three of which are located in the city of Memphis. The main location is Downtown, with satellite locations in Midtown and Hickory Hill. At these centers, individuals can receive career counseling, labor market information, and targeted workshops on topics like resume writing, mock interviewing, computer skills, and soft skills. WIN's Youth Services Department provides services to eligible low-income and out-of-school youth (aged 14-24), including tutoring, study skills training, occupational skills training, mentoring, and summer employment assistance.

#### **GMACWorkforce**

The Greater Memphis Alliance for a Competitive Workforce (GMACWorkforce) was established in 2015, as a result of recommendations from the Memphis and Shelby County Regional Economic Development Plan and the Greater Memphis Chamber's Chairman's Circle. The goal of GMACWorkforce is to enhance the collaboration between partner organizations – educational institutions, workforce agencies (including WIN), community agencies, economic development organizations, and employers – to close the skills gap and build career pathways for in-demand jobs. GMACWorkforce is an intermediary organization managed by the Shelby County Economic Development Growth Engine (EDGE).

#### **Educational Institutions**

Community colleges are typically the principal providers of workforce education and training. University of Memphis, Arkansas State University Mid-South, Southwest Tennessee Community College, Tennessee College of Applied Technology, and William R. Moore College of Technology are all local colleges and institutions that have active workforce training programs.

#### **Foundations and Nonprofits**

Foundations provide private funding for workforce development initiatives that enable experimentation with models that may not be possible under the restrictions of federal funding. Memphis Bioworks is an

example of a non-profit organization funded through a combination of philanthropic contributions, corporate support, and state and federal grants. Bioworks was created in 2001 to foster entrepreneurship and address workforce development needs in the bioscience industry. It works collaboratively with non-profit organizations, schools, state agencies, and the Greater Memphis Chamber of Commerce.

Philanthropic support allows community-based organizations to provide targeted workforce training and adult education at the neighborhood level. For example, Advance Memphis is a non-profit in South Memphis that provides basic adult education and soft skills training for residents of the 38126 zip code. There are many other examples of similar small non-profits providing workforce development services in the city.

### **Industry-Specific Programs**

In addition to the general workforce development activities highlighted above, there are a number of industry-specific programs in Memphis. Existing programs are focused primarily on manufacturing and transportation/distribution/logistics, which are consistent with the industry clusters that have been targeted for economic development. Additional sectors that have been identified for future workforce development efforts include information technology (IT), health care, and construction.

#### *Manufacturing*

According to the 2013 Made in Memphis Manufacturing Industry Survey Report,<sup>47</sup> there are four primary challenges to filling available positions in the manufacturing industry. These include:

- **Retirements:** Many of the job openings in manufacturing are a result of the retiring of highly skilled older workers. This trend is expected to continue with the aging of the Baby Boomer generation.
- **Technological skills:** Advancements in technology have transformed many manufacturing jobs, and workers are increasingly expected to be trained in high-performing computing, 3D printing, and other technical skills that require post-secondary education.<sup>48</sup>
- **Public image of manufacturing careers:** Survey respondents believe that manufacturing careers are perceived negatively in comparison to other professions, and that community colleges and trade schools offer less training in basic mechanics, fewer certificate courses, and fewer internships.

In response to the study's findings, WIN partnered with the Greater Memphis Chamber of Commerce to launch the Made in Memphis initiative, designed to create a pipeline of skilled workers for local manufacturing companies. As part of this initiative, WIN has worked with Southwest Tennessee Community College to develop an Industrial Readiness Training (IRT) course. The four-week program teaches students technical, academic, and "soft" skills. The IRT course is designed to help students pass the ACT WorkKeys and mechanical skills test, which greatly increases their hiring prospects.<sup>49</sup>

GMACWorkforce has also received a grant to implement MOVE-HIRE, a new program to prepare job-seekers for higher-paying jobs in medical device manufacturing. MOVE-HIRE offers credentials, apprenticeships, on-the-job training, and internships for careers including machinists, machine operators, metal finishers, quality assurance, packaging, and logistics. GMACWorkforce has partnered with WIN and training and educational providers, including: University of Memphis, Arkansas State University Mid-South, Southwest Tennessee Community College, Tennessee College of Applied Technology, and William R. Moore College of Technology. Private and philanthropic support is also provided from the Greater

<sup>47</sup>Workforce Investment Network, Manufacturing Industry Survey Report and Recommendations, April 2013.

<sup>48</sup> <https://www.brookings.edu/blog/techtank/2015/07/15/new-skills-needed-for-new-manufacturing-technology/>

<sup>49</sup> <http://www.workforceinvestmentnetwork.com/industrial-readiness-training>

Memphis Medical Device Council, Greater Memphis Chamber, Bartlett Area Chamber of Commerce, Memphis Bioworks Foundation, and Workbay LLC.

#### *Transportation, Distribution and Logistics*

GMACWorkforce, was awarded \$10 million in Trade Adjustment Assistance Community College Career Training (TAACCCT) grants in 2014 to focus on creating or enhancing programs for the manufacturing, transportation, distribution and logistics industries. The grant is implemented by a consortium of four colleges led by Arkansas State University Mid-South, as well as Southwest Tennessee Community College (Southwest), William R. Moore College of Technology (Moore Tech), and Tennessee College of Applied Technology (TCAT). The colleges are working closely with industry councils and K-12 educational institutions.

## Small Business and Entrepreneurship Programs

Memphis has specific programs and organizations dedicated to supporting entrepreneurship and small business development. The programs range from “incubators” for start-up businesses, business plan development and training, and early-stage capital.

- The EPICenter initiative was launched by the Chamber’s Chairman’s Circle, Memphis Bioworks, GMACW, funders, and other partners, with the goal of creating 1,000 new entrepreneurs to start 500 companies in Memphis over the next 10 years. The primary objectives for EPICenter are to form networks with existing community organizations and partners to address entrepreneurship development gaps, including: education and training for entrepreneurs; accelerators and incubators; mentorship; investors; and capital. EPICenter is modeled after New Economy Initiative, a \$100 million philanthropic collaboration to build supportive networks for entrepreneurs in the Detroit region. Thus far, EPICenter has raised \$30 million from a combination of funders, including local foundations, individual corporations, the State of Tennessee, and other sources.
- Memphis Bioworks operates a business incubator located in the UT-Baptist Research Park in the Memphis Medical Center. The incubator includes 34,000 square feet of office space, wet labs, equipment, and a conference and training center to support biotech and clean-tech startups.
- River City Capital Investment Corp, an affiliate of Community LIFT, is a certified community development financial institution (CDFI) that provides loans to businesses, community development organizations, and developers that operate within targeted under-served neighborhoods in Memphis, which include Greater Binghampton, Frayser, and Upper South Memphis.
- EDGE offers specialized technical assistance to local small businesses as part of its economic gardening program, as well as two distinct loan funds. The Inner City Economic Development (ICED) loan fund is focused on revitalization of neighborhood business districts in the core through three-year, forgivable loans of up to \$25,000. The EDGE Impact Fund targets more established businesses, offering SBA-guaranteed loans of \$150,000 or more to businesses in operation for at least three years in Shelby County.
- Downtown Memphis Commission’s Center City Development Corporation issues low-interest loans of up to \$150,000 to encourage commercial real estate development in the Central Business Improvement District (CBID). The loans are typically used for façade improvements, building renovations, and other permanent investments. The Center City Development Corporation also offers matching grants for exterior improvement to businesses.

## Key Findings

Based on the review of the workforce development, entrepreneurship, and small business development programs described above, the following findings emerge.

**According to a recent survey<sup>50</sup>, job-seekers in the city are often unaware of the programs offered and/or unable to take full advantage of their services.** Although organizations in the city provide many useful resources to job seekers, residents may not be aware of these services. The time, effort and expense involved with seeking assistance and additional training may be a deterrent, particularly for those with household responsibilities or existing employment. Lack of access to transportation and child care are often major impediments for job-seekers.

**Employers have increasing expectations for skilled workers, even when hiring for entry-level jobs.** The level of training that is expected for entry-level jobs in many sectors requires training and skills that go beyond a high school diploma. However, as described above, approximately 55 percent of Memphians lack post-secondary education.

**There is a lack of coordination between nonprofits and institutions providing workforce training.** Memphis has many existing nonprofits and educational institutions that provide assistance to job-seekers, but there are not always clear linkages, creating gaps in training. Increased coordination could help create more seamless connections between various training and certification programs.

**For many Memphians, job retention is just as challenging as getting hired.** While many traditional workforce programs focus on getting people into jobs, there is not as much support for workers once they are in their jobs.

**There are relatively few programs and funding sources available for small business owners and entrepreneurs in comparison with the resources allocated to the recruitment of larger firms, including tax incentives.** The use of tax incentives to recruit and retain businesses is discussed in the following chapter.

<sup>50</sup> Younger Associates, GMAC Workforce Comprehensive Workforce Analysis, 2016.

## VIII. COMMERCIAL LAND USES AND INVESTMENT

Chapter VI described city and countywide employment trends. This chapter builds on that analysis to describe the spatial location of jobs, existing commercial and institutional land uses, and new investment within the city of Memphis. The chapter is organized by land use (industrial, office, medical and educational, retail, and accommodation), and also includes a section describing the role of tax incentives in attracting new jobs and real estate investment.

Key sources for this chapter include a review of previous studies,<sup>51</sup> interviews with local stakeholders and economic development professionals, and additional mapping and data analysis.

### INDUSTRIAL LAND USES AND INVESTMENT

**Figures VIII-1 and VIII-2** show where jobs in the manufacturing sector and transportation, warehousing, and whole sectors are located. **Figure VIII-3** shows the total industrial inventory (including distribution/warehouse and manufacturing space) and vacancy rates by planning district. **Figure VIII-4** provides a map of industrial buildings by year built. Key findings about industrial land uses and investment are described below.

**Memphis' transportation infrastructure has always played a major role in shaping the location of land uses related to production and trade.** As discussed in the previous chapters, Memphis initially developed as a hub for trade and processing of cotton, lumber and other agricultural products. The city's industrial base grew up around the Port and railroads along the Mississippi River. As logistics and distribution have become increasingly important to the economy, new industrial investment has moved south and east, driven by a need for proximity to Memphis International Airport and excellent highway access. Today, employment in transportation and warehousing is highly concentrated around the airport, while manufacturing employment remains more dispersed (**Figures VIII-1 and VIII-2**).

**Most of the recent industrial investment within the city of Memphis is distribution and warehousing space, concentrated in the eastern and southern planning districts.** As shown in **Figure VIII-4**, new space has increasingly been built in Parkway Village (near the airport), with smaller clusters in Cordova along I-40 and Raleigh (anchored by the Nike distribution center, despite the fact that this area is further from the highway than most users prefer). At the same time, areas closer to the Port in the South Planning District have continued to attract some new investment, including several major expansions and new heavy industrial uses over the last several years on or near President's Island (e.g., Electrolux, Mitsubishi Electric, Nucor Steel).

**Although employment growth in transportation and logistics appears to be slowing, there will likely be continued need for new space in this sector within the region.** As discussed in Chapter VI, after many decades of growth, Shelby County has lost jobs in the transportation and logistics sector since 2000. The sector is projected to grow modestly in the coming years. The transportation and logistics industries are becoming increasingly automated. As a result, the need for transportation and warehousing space may continue to grow faster than employment in this cluster.

<sup>51</sup> Including RCLCO, "Market Analysis for Memphis Comprehensive Plan" and Randall Gross/Development Economics, "Part 1: Background & Target Industry Report," *Comprehensive Economic Development Strategy (CEDS)*.

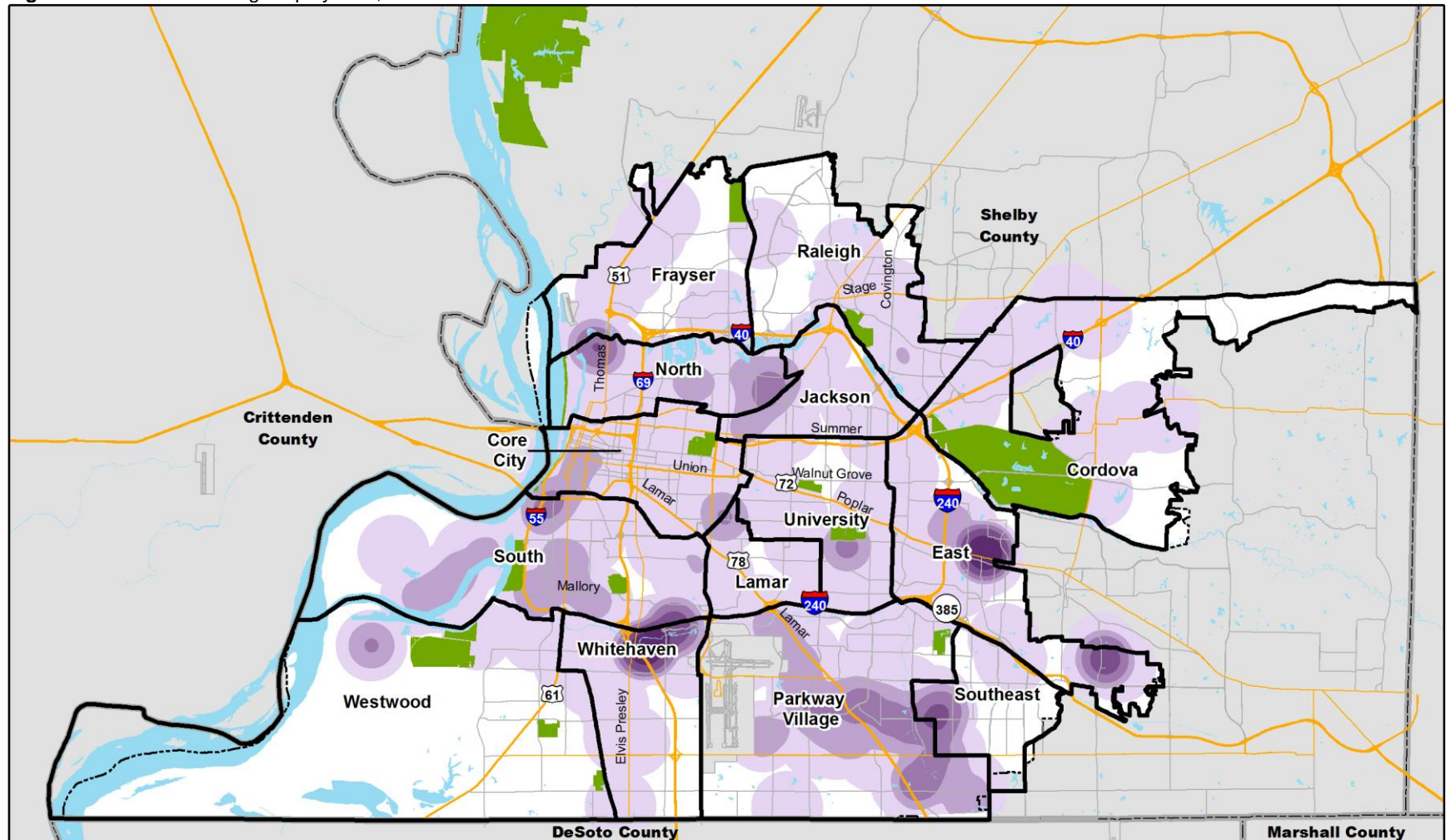
**Industrial development is increasingly occurring outside the city, and especially in DeSoto County, Mississippi.** Memphis still accounts for two-thirds of the nine-county region's industrial inventory, but only captured 20 percent of new deliveries between 2010 and 2016.<sup>52</sup> DeSoto County shares many of the same advantages as Memphis in terms of access to the airport and freeways. However, whereas Memphis' industrial land is largely built out, DeSoto County still has significant undeveloped land available. Building outside the city is typically more cost effective than redeveloping existing industrial properties in Memphis. Additionally, Mississippi reportedly offers more aggressive tax incentives than allowed under Tennessee state law.

**North and Core City, which once had more significant manufacturing base, now have high vacancy rates and significant obsolete space.** Vacant and obsolete sites in these districts include both former manufacturing sites that not require significant environmental remediation, and older warehousing space that no longer meets the needs of modern users. It is also important to note that there are still some active industrial uses in these areas. For example, KTG USA (which manufactures bathroom tissues, facial tissues, and paper towels) is expanding their operations in North Memphis. Other planning districts with very high industrial vacancy rates include Southeast, Lamar, and Frayser (**Figure VIII-3**).

**Reuse and redevelopment of older industrial sites is challenging, although some neighborhoods have attracted adaptive reuse projects.** Many of the city's older manufacturing sites (concentrated in the Core City, South, and North subareas) do not meet the requirements of modern manufacturers. Changing preferences for logistics and distribution space also make it difficult to reuse existing warehouses; new space is typically built with larger floorplates and higher ceilings, making vacancies in older buildings (built before approximately 1990) challenging to fill. Redeveloping existing industrial sites is often very expensive and time consuming, often involving environmental remediation, site infrastructure and utilities improvements, and parcel assembly. However, some neighborhoods in Downtown and Midtown (including Crosstown Concourse, South Main Street, the Edge, the Pinch) have attracted adaptive reuse projects that are transforming historic warehouse buildings and factories into creative office, residential, or other uses.

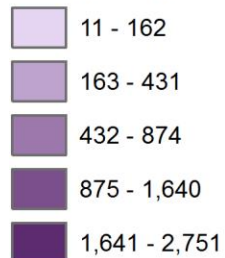
<sup>52</sup> Analysis by RCLCO.

**Figure VIII-1. Manufacturing Employment, 2014**



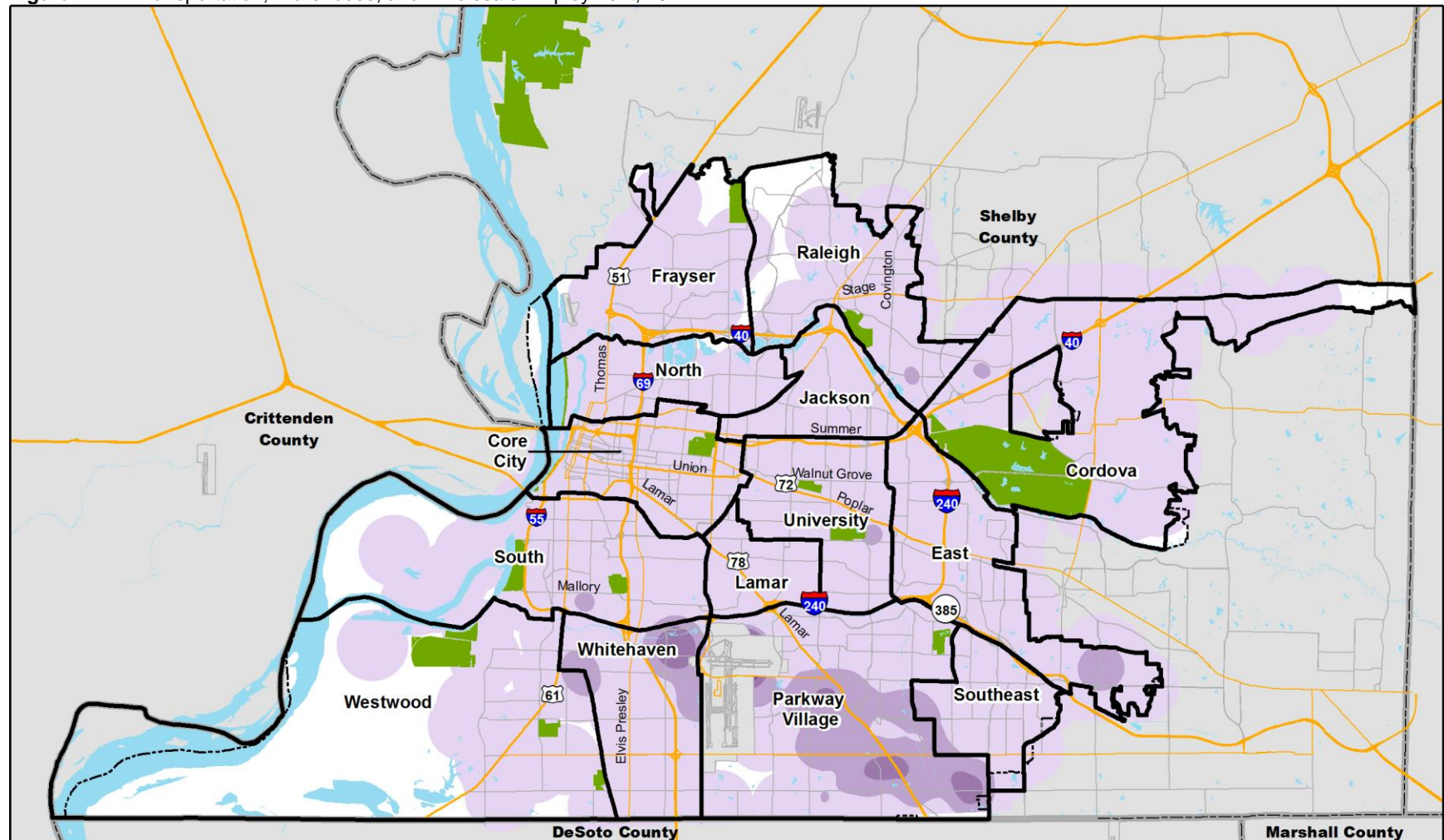
### Manufacturing Employment

#### Jobs per Square Mile



Source: Longitudinal Household Employment Dynamics, 2014; Strategic Economics, 2017.

**Figure VIII-2.** Transportation, Warehouse, and Wholesale Employment, 2014



**Transportation, Warehouse, and Wholesale Employment  
Jobs Per Square Mile**



Source: Longitudinal Household Employment Dynamics, 2014; Strategic Economics, 2017.

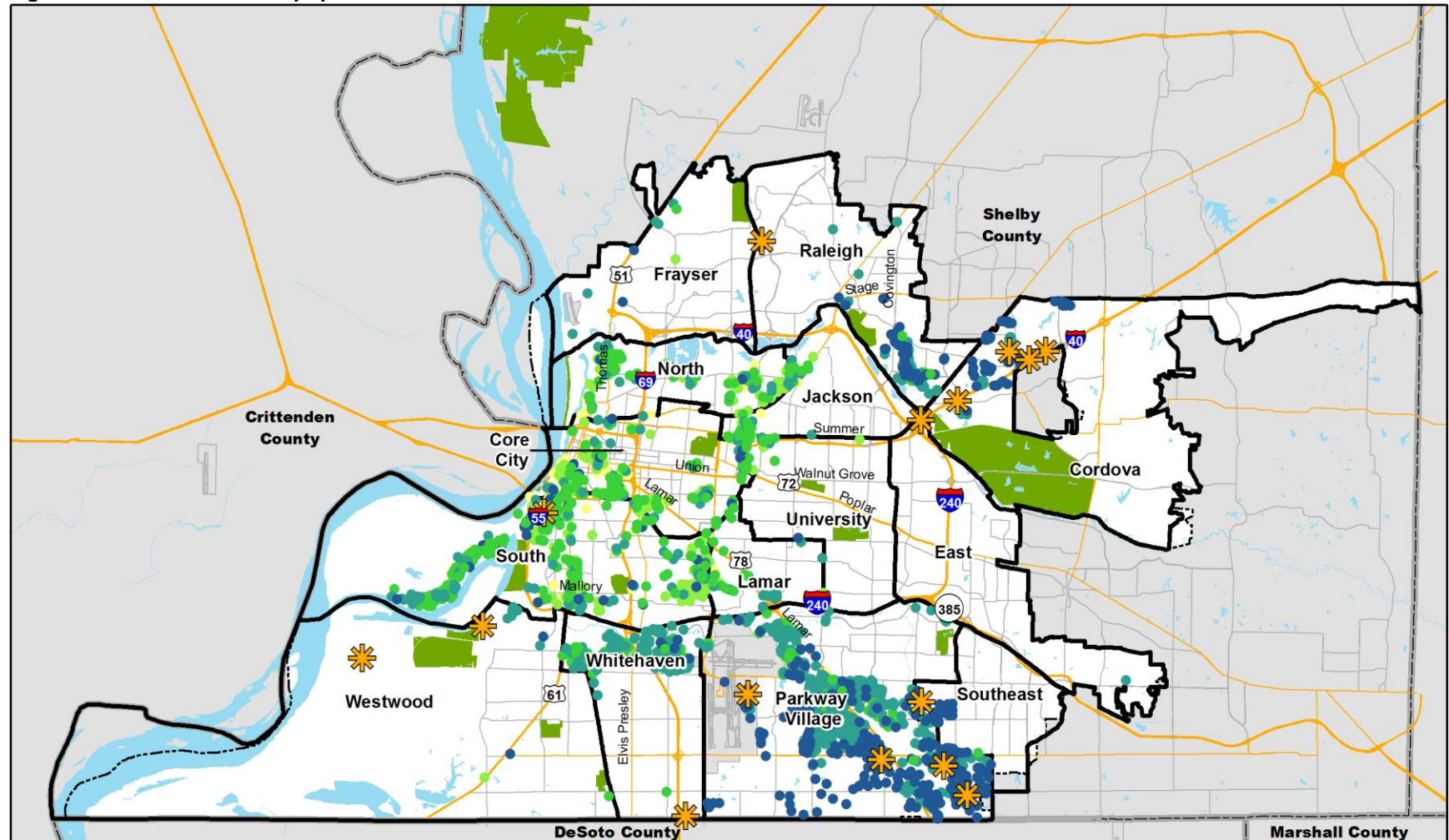
**Figure VIII-3.** Total Industrial Inventory and Vacancy Rates by Planning District

<b>Planning District</b>	<b>Rentable Building Area (Square Feet)</b>	<b>Distribution and Warehouse as % of Total RBA</b>	<b>Manufacturing as % of Total RBA</b>	<b>Number of Buildings</b>	<b>Vacant Square Feet</b>	<b>Vacancy Rate</b>	<b>Buildings With 25% or More Vacancy</b>
Parkway Village	86,462,906	94%	4%	819	5,962,577	7%	7%
South	27,477,303	70%	28%	479	2,536,388	9%	6%
North	11,720,796	70%	28%	175	2,220,709	19%	21%
Core City	10,989,749	73%	23%	342	2,525,525	23%	16%
Whitehaven	9,407,722	83%	12%	201	450,272	5%	5%
Southeast	5,648,473	90%	10%	36	1,227,625	22%	19%
Raleigh	5,299,334	95%	1%	161	54,647	1%	3%
Jackson	4,378,562	72%	27%	63	278,354	6%	10%
Cordova	3,498,286	94%	0%	98	237,396	7%	5%
Westwood	2,797,933	33%	66%	16	306,349	11%	19%
Lamar	2,194,638	85%	14%	42	478,065	22%	7%
East	911,963	100%	0%	5	0	0%	0%
University	656,823	88%	12%	69	37,578	6%	4%
Frayser	653,192	94%	0%	11	434,500	67%	27%
<b>Citywide Total</b>	<b>172,097,680</b>	<b>85%</b>	<b>13%</b>	<b>2,517</b>	<b>16,749,986</b>	<b>10%</b>	<b>9%</b>

Sources: CoStar, September 2017; Strategic Economics, 2017.

Note: Vacancy rate includes space categorized by CoStar as "vacant" as well as "unleased" space. The main difference in these categorizations is that vacant space is actively on the market, while unleased space may not be actively seeking tenants.

**Figure VIII-4. Industrial Inventory by Year Built**

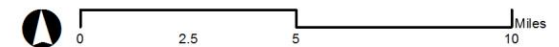


**Industrial Inventory by Year Built, September 2017**

**Year Built**

- 1829 - 1930
- 1931 - 1950
- 1951 - 1970
- 1971 - 1990
- 1991 - 2010
- ★ 2011 - 2017

- Planning Districts
- Memphis
- Counties
- Water
- Parks



Sources: CoStar, September 2017; Strategic Economics, 2017.

## OFFICE LAND USES AND INVESTMENT

**Figure VIII-5** shows concentrations of office-based employment. **Figure VIII-6** shows the total office inventory and vacancy rates by planning district. **Figure VIII-7** provides a map of office buildings by year built. Key findings about office land uses and investment are described below.

**Memphis' office-based employment and office space are concentrated in Core City and East (Polar Avenue Corridor), with lower vacancy rates and a concentration of new and Class A space in East.** Within the Core City, Downtown Memphis retains its importance as the city's historic central business district and government center. The recent relocation of the ServiceMaster headquarters to Downtown suggests an interest among office tenants in locating in a more urban environment. However, the district has a relatively high vacancy rate and office is spread out over a large area (including Downtown, the Medical District, and the new Crosstown project), making it difficult to achieve a critical mass of office workers that would support a vibrant street life, retail, and restaurants.

Although Core City attracted new investment in recent years, the inventory in East (concentrated along the Poplar Avenue corridor) is generally newer and includes more Class A space. East also has a much lower vacancy rate compared to Core City (**Figure VIII-6**). The district benefits from proximity to a higher education, higher income population, including residents living both inside Memphis and outside of the city in Shelby County or Mississippi. At the same time, this area also benefits from proximity to Downtown compared to office markets located outside of the city that also have excellent access to the office workforce.

**Within the region, the city of Memphis is the most competitive location for new office tenants and development.** Overall, Memphis accounts for 70 percent of existing office space in the nine-county region, and the city captured 44 percent of new office development between 2010 and 2016.<sup>53</sup> There are opportunities both for reuse of existing buildings in Core City and East, and for new development on infill sites within East.

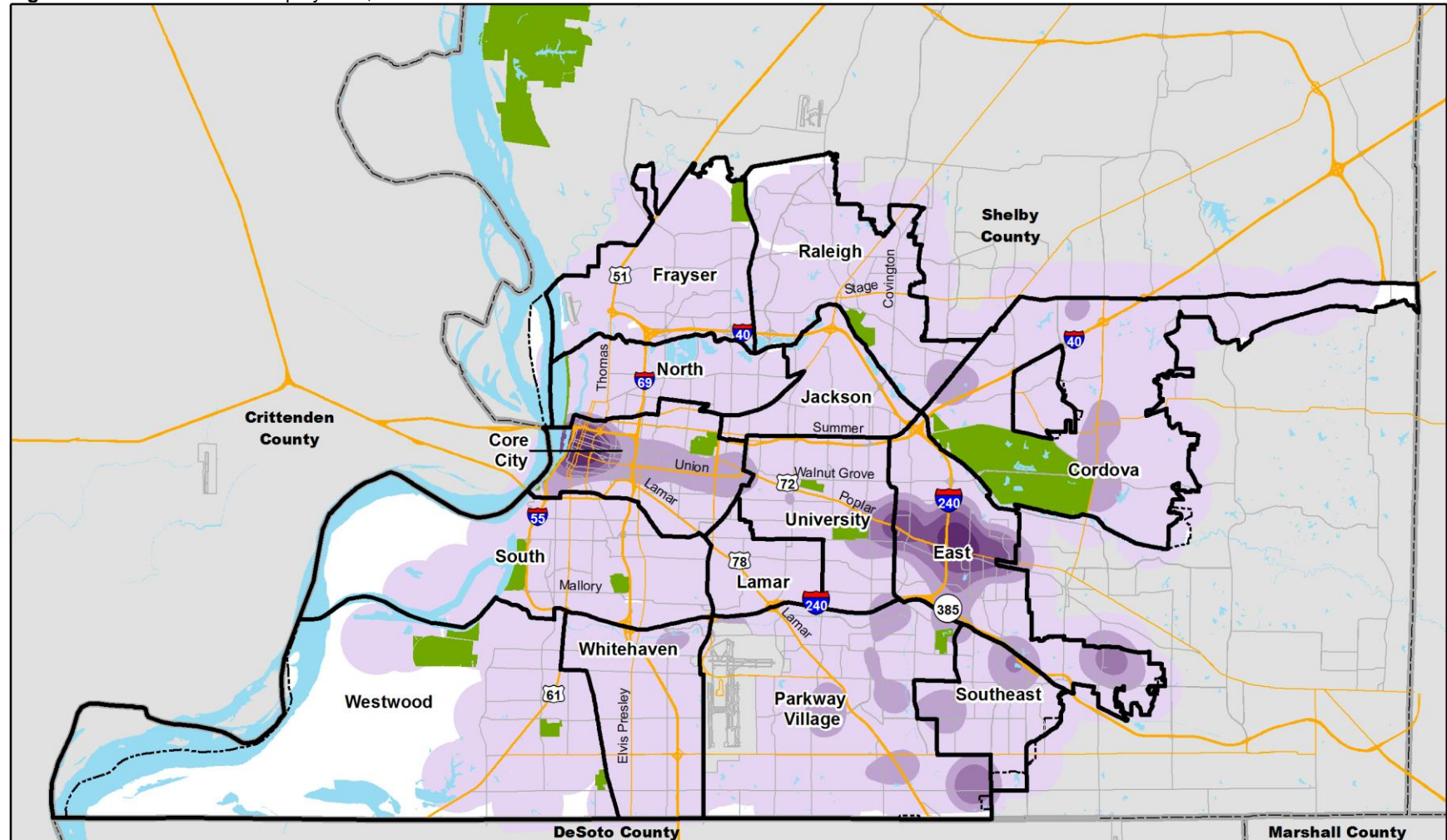
**However, there are also emerging office markets outside the city.** In particular, the 385 office corridor extends along Tennessee State Route 385 (Bill Morris Parkway) from I-240, along the borders of East and Southeast Memphis, to I-269 near Collierville. This corridor is sometimes called the Memphis Technology Corridor, and has also become a major office/corporate node within the region. The corridor is considered a major economic development opportunity within the region, with a dedicated 385 Corridor Economic Development Alliance representing the Chambers of Commerce in Arlington, Bartlett, Collierville, Germantown, Lakeland, and Millington that is focused on encouraging growth in the outer suburban ring of Shelby County.<sup>54</sup>

**The office clusters in Parkway Village and Whitehaven have high vacancy rates, and there may be potential for redevelopment as industrial space.** These districts have the largest office markets after Core City and East, but they also have high vacancy rates – and a particularly high share of buildings in which a quarter or more of rentable building area is unoccupied (**Figure VIII-6**). Office space in these areas is isolated from other office users, and less accessible to the office workforce and to restaurants, retail, and other amenities compared to East or Core City. Some of these office properties may be redeveloped as industrial, given the high demand for industrial space in these districts.

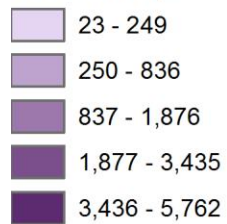
<sup>53</sup> RCLCO, "Market Analysis for Memphis Comprehensive Plan."

<sup>54</sup> Randall Gross/Development Economics, "Part 1: Background & Target Industry Report," *Comprehensive Economic Development Strategy (CEDS)*.

**Figure VIII-5. Office-Based Employment, 2014**



**Office-Based Employment  
Jobs Per Square Mile**



Note: Employment includes Information; Finance and Insurance; Real Estate and Rental and Leasing; Professional, Scientific, and Technical Services; and Management of Companies and Enterprises.

Source: Longitudinal Household Employment Dynamics, 2014; Strategic Economics, 2017.

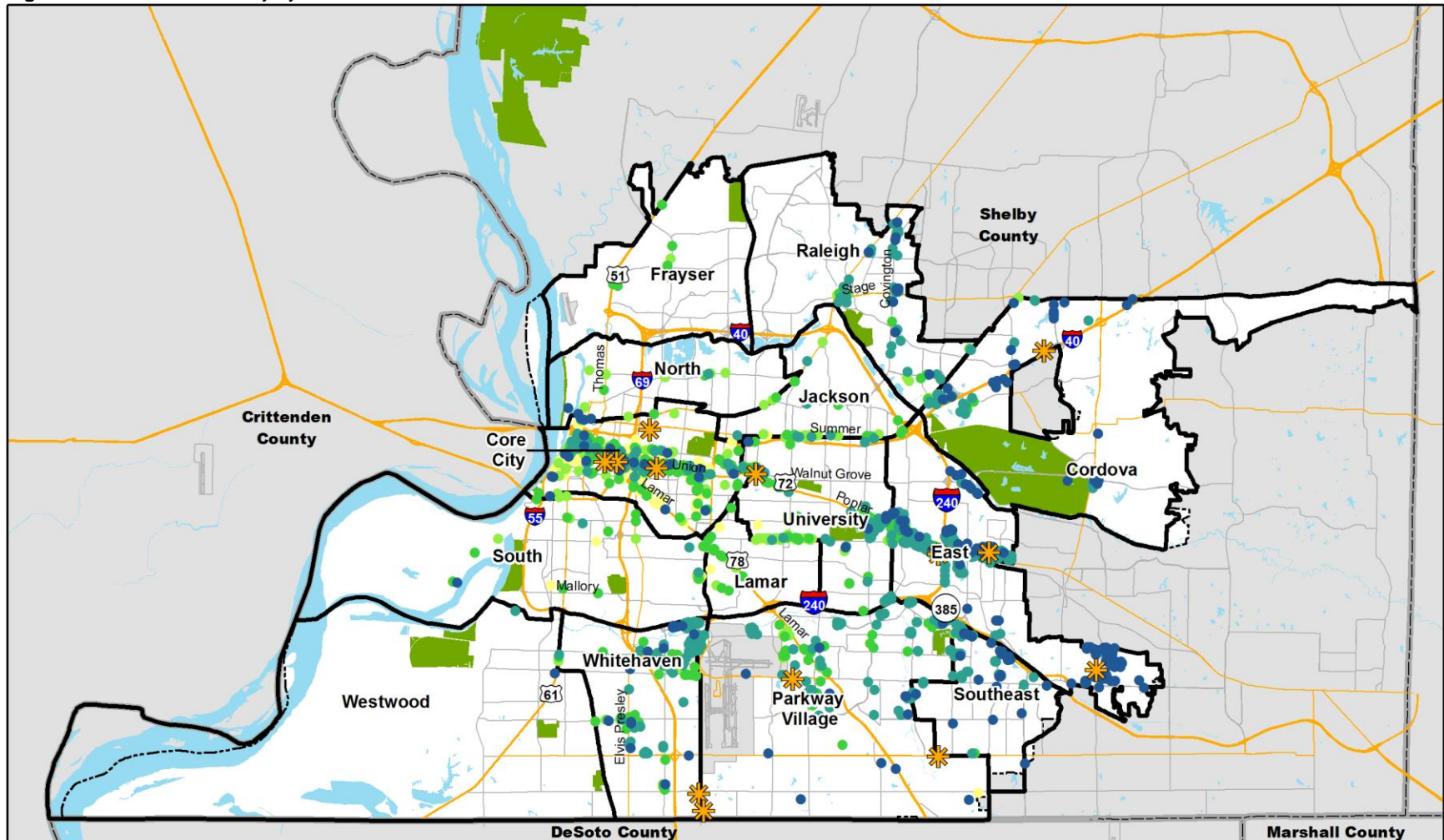
**Figure VIII-6. Office Inventory and Vacancy Rates by Planning District**

<b>Planning District</b>	<b>Rentable Building Area (Square Feet)</b>	<b>Number of Buildings</b>	<b>Vacant Square Feet</b>	<b>Vacancy Rate</b>	<b>Percent of Buildings With 25% or Higher Vacancy Rate</b>
Core City	16,357,167	584	3,079,833	19%	9%
East	13,188,288	360	1,172,466	9%	9%
Parkway Village	3,981,883	159	1,085,221	27%	14%
Whitehaven	3,699,708	140	616,143	17%	16%
University	2,089,883	187	154,034	7%	5%
Cordova	1,631,059	62	177,665	11%	16%
Southeast	1,199,848	72	268,987	22%	13%
Raleigh	850,872	62	76,977	9%	8%
North	309,762	18	0	0%	0%
South	235,637	40	2,997	1%	5%
Jackson	150,339	37	22,847	15%	11%
Lamar	150,250	37	0	0%	0%
Frayser	30,420	10	0	0%	0%
Westwood	16,708	3	0	0%	0%
<b>Citywide Total</b>	<b>43,891,824</b>	<b>1,771</b>	<b>6,657,169</b>	<b>15%</b>	<b>10%</b>

Note: Vacancy rates include space categorized by CoStar as "vacant" as well as "unleased" space. The main difference in these categorizations is that vacant space is actively on the market, while unleased spaces may not be actively seeking tenants.

Sources: CoStar, September 2017; Strategic Economics, 2017.

**Figure VIII-7. Office Inventory by Year Built**



**Office Inventory by Year Built, September 2017**

- |               |                      |
|---------------|----------------------|
| ● 1829 - 1930 | □ Planning Districts |
| ● 1931 - 1950 | □ Memphis            |
| ● 1951 - 1970 | □ Counties           |
| ● 1971 - 1990 | ■ Water              |
| ● 1991 - 2010 | ■ Parks              |
| ★ 2011 - 2017 |                      |

Sources: CoStar, September 2017; Strategic Economics, 2017.



## MEDICAL AND EDUCATION LAND USES AND INVESTMENT

This section discusses institutional land uses and investment occurring within Memphis. **Figure VIII-8** shows where medical and educational jobs are concentrated within the city. Comprehensive data on institutional investment were not available.

**Memphis has a significant concentration of medical institutions, universities, and research facilities clustered in Core City.** Methodist University Hospital, Baptist Memorial Hospital, St. Jude Children's Research Hospital, LeBonheur Children's Hospital, Memphis Veterans Administration Medical Center, Regional One Health, University of Tennessee Health Sciences Center, Southern College of Optometry, Baptist College of Health Sciences, and Southwest Tennessee Community College are all located in the Medical District, to the east of Downtown. Further east in the Midtown area, other institutions include Rhodes College, Memphis College of Art, LeMoyne-Owen College, Christian Brothers University, and Memphis Theological Seminary.

**The city's medical institutions are in the midst of a rapid expansion, tied to broader regional and national trends in the health care industry.** Many of the major institutions in the Medical District are planning or have recently completed significant construction, including major campus expansions by the St. Jude's, Methodist University Hospital, LeBonheur Children's Hospital, and the University of Tennessee Health Center. Total investment by these and other institutions is estimated at \$3 billion,<sup>55</sup> and new inpatient and outpatient facilities, medical and administrative offices, academic, and research buildings are expected to draw thousands of new workers, students, and patients to the area in the coming years. The growth of Memphis' medical institutions is linked to the growing demand for health care regionally; the implementation of several campus master plans that had been under development for a number of years; and, in the case of St. Jude's, that hospital's growing national and international renown as a specialized pediatric medical center and research facility.

**In turn, institutional expansion in the Medical District is driving new residential and retail development in Midtown and Downtown.** Between them, the major institutions in the Medical District employed approximately 16,000 workers and educated 8,000 students as of 2014, with significant growth underway.<sup>56</sup> Anecdotally, there appears to be increased interest among Medical District workers and students in living in more urban areas and closer to work, which is helping drive new residential and mixed-use development in Downtown and Midtown, including projects such as Crosstown Concourse.

**The Medical District institutions are working to strengthen the communities between their campuses through the Memphis Medical District Collaborative (MMDC).** Eight medical and educational institutions<sup>57</sup> formed the MMDC in 2014 to coordinate their community development efforts. Through the MMDC, these organizations are growing their role as "anchor institutions" that seek to leverage their workforce, purchasing power, real estate holdings, and core missions to invest in the neighborhood and grow the local economy. Some of the organization's major initiatives to date include a Live Local program that provides incentives for employees of participating organizations to rent, buy, and invest in their homes in and around the Medical District; a Buy Local program focusing on shifting the purchasing power of the institutions to support local, women, and minority owned businesses; and a Hire Local program that is currently under development but will focus on creating connections between the institutions and local workforce development organizations.

<sup>55</sup> Interview with Tommy Pacello (President, Memphis Medical District Collaborative), December 2017.

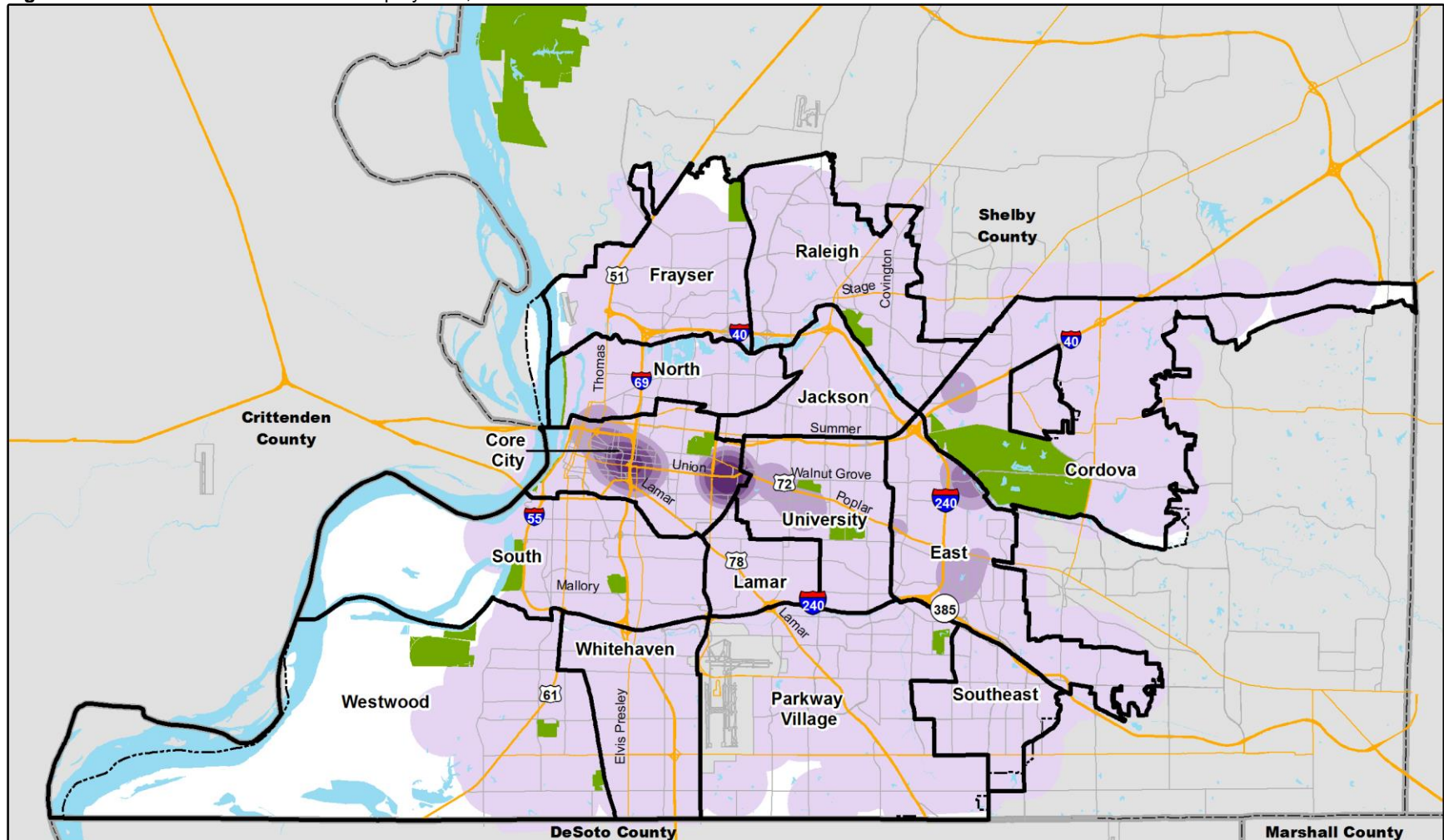
<sup>56</sup> Memphis Medical District Collaborative, *2016 Annual Report*, <http://mdcollaborative.org/>.

<sup>57</sup> Baptist College of Health Sciences, Memphis Bioworks Foundation, Methodist Le Bonheur Healthcare, Regional One Health, Southern College of Optometry, Southwest Tennessee Community College, St. Jude Children's Research Hospital/ALSAC. And the University of Tennessee Health Science Center

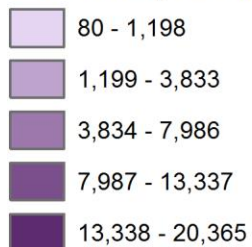
**Public agencies and the MMDC are coordinating infrastructure investments to support the Medical District's growth.** The state, city, and county are each planning to contribute millions of dollars in infrastructure investments to support St. Jude's expansion, including \$12 million from the state budget, \$25 million from a city tourism development zone, and a tax increment financing (TIF) district under consideration by the Shelby County Community Redevelopment Agency.<sup>58</sup> On a smaller scale, the MMDC has worked with the City on coordinating street improvements (including on Monroe Avenue, Marshall Avenue, and Manassas Street). MMDC has helped amplify the impact of the City's street repaving by paying for additional design work and streetscape improvements.

<sup>58</sup> Kevin McKenzie, "Pinch infrastructure targeted to aid St. Jude expansion," Commercial Appeal, December 8, 2016, <http://www.commercialappeal.com/story/money/business/development/2016/12/08/st-jude-lands-state-funds-expansion/95117950/>.

**Figure VIII-8. Medical and Educational Employment, 2014**



**Medical and Education Employment  
Jobs Per Square Mile**



Note: Employment includes Educational Services and Health Care and Social Assistance.  
Source: Longitudinal Household Employment Dynamics, 2014; Strategic Economics, 2017.

## RETAIL LAND USES AND INVESTMENT

**Figure VIII-9** shows the location of retail employment in Memphis. **Figure VIII-10** shows total retail inventory and vacancy rates by Planning Districts. **Figure VIII-11** provides a map of retail inventory by decade built. **Figure VIII-12** provides an initial inventory of grocery stores and super centers by location, based on Google map searches and data provided by CoStar, a commercial real estate tracking firm.<sup>59</sup>

**In general, retail tenants and developers make location decisions based on population densities, incomes, and the location of competitors.** Different types of retail serve different geographic areas. For example, neighborhood-serving retail like grocery stores and pharmacies generally serve consumers within a one- to three-mile radius (or “trade area”), while super-regional malls like Wolfchase Galleria in Cordova can serve trade areas as large as 25 miles.<sup>60</sup> Whatever their trade area, retailers generally consider the number and incomes of consumers they can reach and the supply of competitive retailers within that trade area.

**In Memphis, retail development over the decades has generally followed new residential development and higher income households east.** Overall, the city of Memphis accounts for 58 percent of the nine-county region’s total retail inventory, and 33 percent of net new square feet delivered between 2000 and 2016.<sup>61</sup> Within the city, there is new retail development along many of the major corridors and arterials throughout the city, but it is concentrated in the east. Core City has also attracted retail development in recent years, reflecting the renaissance of Downtown as a residential, employment, and tourist location. Districts with little to no recent retail development include North, Frayser, Raleigh, Jackson, South, and Westwood (**Figure VIII-11**).

**The city’s retail supply has grown faster than the population.** Between 2000 and 2017, the city’s total retail inventory grew by an estimated 17 percent. In comparison, the population grew by one percent between 2000 and 2015. Some amount of new development is necessary to replace older strip malls and shopping centers, which may not meet the preferences of modern retailers (especially national chains). Overall, however, the city of Memphis has an estimated 82 square feet of retail per person<sup>62</sup> – compared to a national average of 23.5 square feet of retail per person, which is considered an oversupply.<sup>63</sup> Memphis’ citywide retail vacancy rate of 12 percent – and the higher vacancy rates in districts including Parkway Village, Southeast, Whitehaven, Frayser, and Westwood – indicate that overall supply significantly exceeds demand.

**At the same time, national trends are creating a more challenging environment for traditional brick-and-mortar retail stores.** Consumers have shifted much of their spending online in recent years. More

<sup>59</sup> Note that this map may require additions and changes following the district workshop process.

<sup>60</sup> ICSC Research and CoStar Realty Information, Inc., “U.S. Shopping-Center Classification and Characteristics,” January 2017, [https://www.icsc.org/uploads/research/general/US\\_CENTER\\_CLASSIFICATION.pdf](https://www.icsc.org/uploads/research/general/US_CENTER_CLASSIFICATION.pdf).

<sup>61</sup> Calculation by Strategic Economics, based on retail inventory data from the CoStar group.

<sup>62</sup> Calculation by Strategic Economics, based on retail inventory data from the CoStar group.

<sup>63</sup> The next two countries with the most retail space per capita are Canada and Australia, which have 16.4 and 11.1 square feet per person, respectively. CoStar estimates that the U.S. would need to shed about a billion square feet of retail space (or 10 percent of the current inventory) in order for supply to be more in line with demand. 1. Hayley Peterson, “There’s One Major Thing Everyone Gets Wrong about Amazon and the US Retail Apocalypse,” Business Insider Australia, July 23, 2017, <https://www.businessinsider.com.au/amazon-shouldnt-be-blamed-for-retail-apocalypse-2017-7>; Lauren Hepler, “Union Square Struggles with Retail Challenges,” San Francisco Business Times, June 22, 2017, <https://www.bizjournals.com/sanfrancisco/news/2017/06/22/sf-strux-2017-unionsquare-retailing-real-estate.html>.

than 40 percent of the growth in total retail sales occurred in online retail between 2014 and 2016.<sup>64</sup> Amazon.com alone was estimated to account for 43 percent of online retail sales in 2016, and 53 percent of the online sales growth that occurred in that year.<sup>65</sup> Many retail chains are also struggling to meet major debt obligations, often resulting from leveraged buyouts by private equity firms.<sup>66</sup> Together, these challenges have led major retailers to close thousands of stores in the last year, with the majority of announced closures in the apparel, electronics, shoe store, and office supply categories.<sup>67</sup> At the same time, however, several retail categories are continuing to expand, including dollar stores, other discount stores, and grocery stores.<sup>68</sup> Restaurants and personal service uses are also driving much of the demand for new space in shopping districts across the country.

**Despite the general oversupply of retail, some planning districts have limited access to full-service grocery stores.** As shown in **Figure VIII-12**, large swaths of Frayser, North, Raleigh, Jackson, South, and Westwood do not have access to a full-service grocery store. Shopping options for food in these neighborhoods is generally limited to dollar stores and corner stores.

**Restaurants and other food-related uses appear to be driving some of the ongoing retail investment in the city.** Many of the recent, planned and proposed retail and mixed-use projects in the pipeline feature restaurants, breweries, food halls, and other eateries. This trend is consistent with both Memphis' local culture and image as a tourist destination that emphasizes food and entertainment, and national trends. Nationally, consumer spending on food away from home has reached record levels in recent years, and restaurant sales have been expanding since the end of the recession (although there are signs of a slowdown in recent quarters).<sup>69</sup>

<sup>64</sup> U.S. Census Bureau, 2015 Annual Retail Trade Survey (released March 6, 2017) and Annual Revision of Monthly Retail and Food Services: Sales and Inventories—January 1992 Through March 2017 (analysis by Strategic Economics).

<sup>65</sup> B. I. Intelligence, "Amazon Accounts for 43% of US Online Retail Sales," Business Insider, accessed July 6, 2017, <http://www.businessinsider.com/amazon-accounts-for-43-of-us-online-retail-sales-2017-2>.

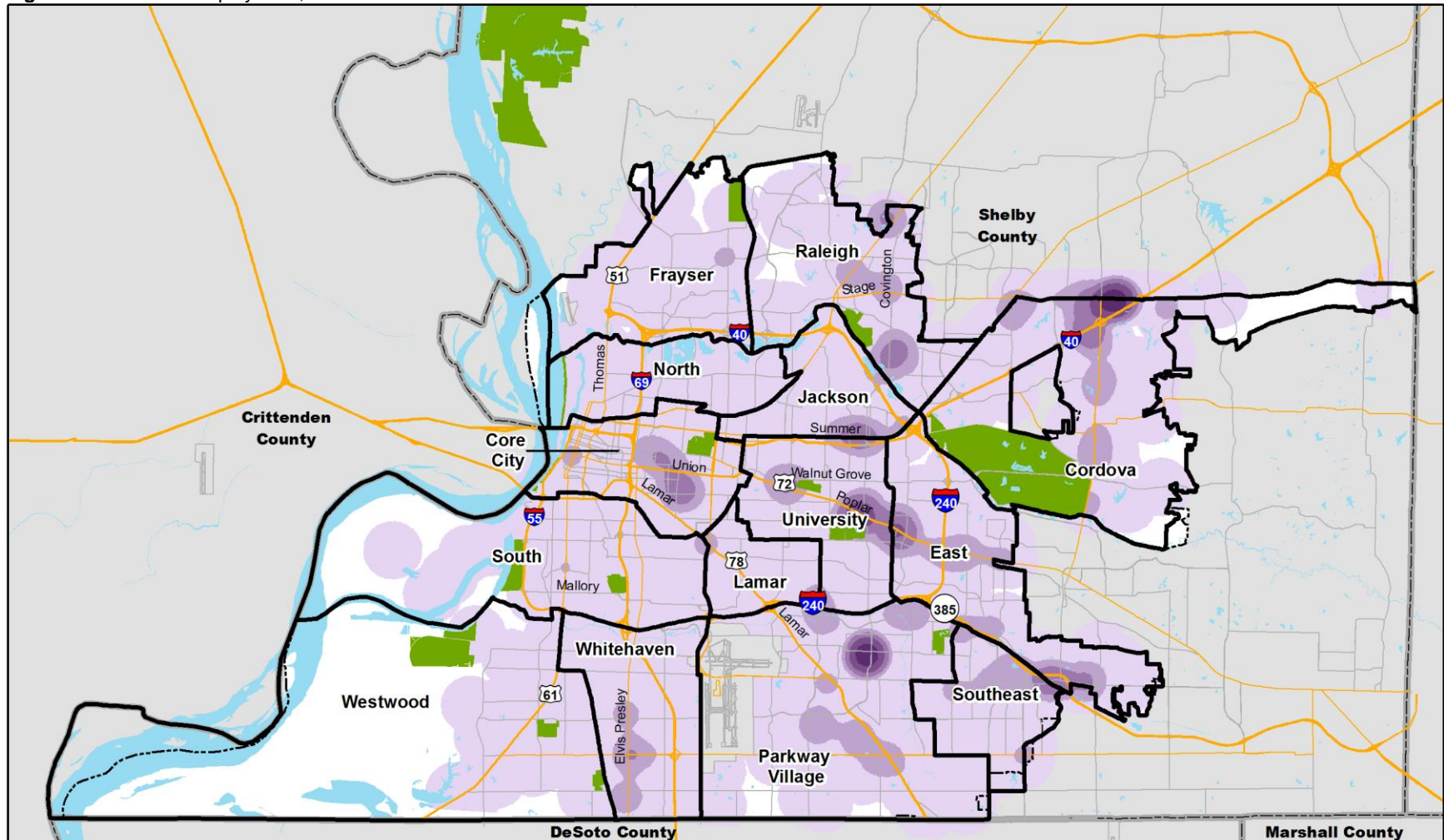
<sup>66</sup> I. Matt Townsend et al., "America's 'Retail Apocalypse' Is Really Just Beginning," Bloomberg.com, accessed December 6, 2017, <https://www.bloomberg.com/graphics/2017-retail-debt/>.

<sup>67</sup> JLL, "Bagged or Boxed? The Future of 13 Retail Categories," Retail Research Point of View, 2017, [http://img04.en25.com/Web/JLLAmericas/%7B88537be6-f837-429d-b8ee-6c702f665056%7D\\_JLL\\_Retail\\_POV\\_Screens\\_to\\_Stores\\_Report\\_FNL\\_LR.pdf](http://img04.en25.com/Web/JLLAmericas/%7B88537be6-f837-429d-b8ee-6c702f665056%7D_JLL_Retail_POV_Screens_to_Stores_Report_FNL_LR.pdf).

<sup>68</sup> Ibid.

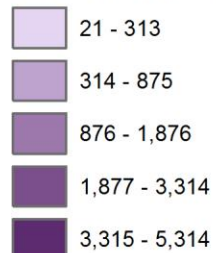
<sup>69</sup> Derek Thompson, "The Paradox of American Restaurants," The Atlantic, June 20, 2017, <https://www.theatlantic.com/business/archive/2017/06/its-the-golden-age-of-restaurants-in-america/530955/>.

**Figure VIII-9. Retail Employment, 2014**



**Retail Trade Employment**

**Jobs Per Square Mile**



Source: Longitudinal Household Employment Dynamics, 2014; Strategic Economics, 2017.

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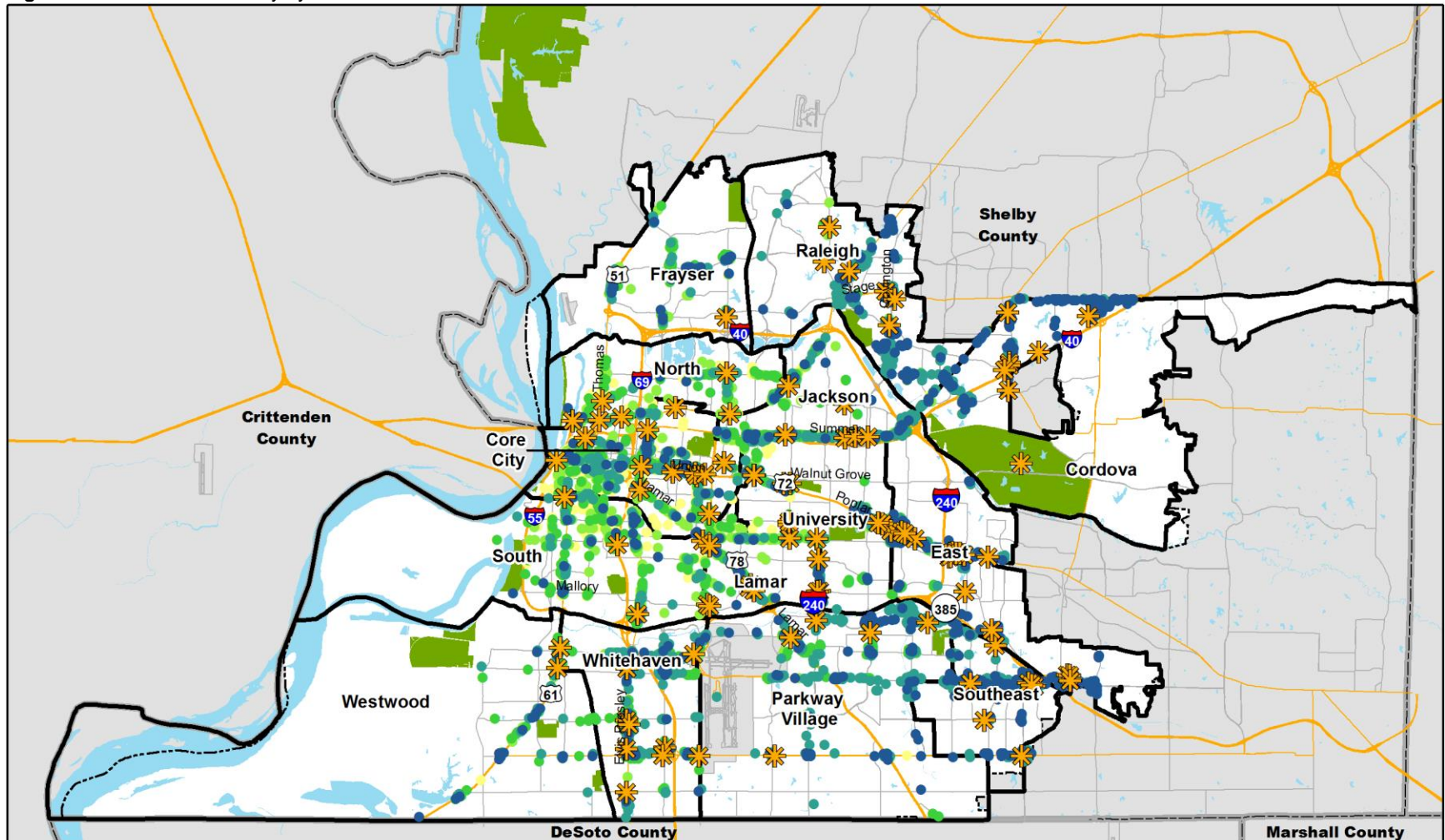
**Figure VIII-10.** Retail Inventory and Vacancy Rate by Year Built

<b>Planning District</b>	<b>Rentable Building Area (Square Feet)</b>	<b>Number of Buildings</b>	<b>Vacant Square Feet</b>	<b>Vacancy Rate</b>	<b>Buildings With 25% or More Vacancy</b>
Core City	8,626,881	1,068	924,944	11%	9%
Parkway Village	6,222,858	440	2,048,545	33%	8%
East	5,193,479	312	269,953	5%	9%
University	5,159,219	539	266,958	5%	9%
Southeast	5,119,677	234	776,807	15%	8%
Raleigh	4,747,535	313	333,310	7%	5%
Cordova	4,458,644	177	125,080	3%	5%
Whitehaven	4,218,766	364	693,850	16%	10%
South	2,749,861	505	335,701	12%	8%
Jackson	2,405,822	268	152,833	6%	4%
Lamar	1,703,766	326	161,848	9%	7%
Frayser	1,396,040	150	160,593	12%	5%
North	1,050,183	259	61,680	6%	5%
Westwood	625,374	101	80,932	13%	6%
<b>Citywide Total</b>	<b>53,678,105</b>	<b>5,056</b>	<b>6,393,036</b>	<b>12%</b>	<b>8%</b>

Sources: CoStar, September 2017; Strategic Economics, 2017.

Note: Vacancy rates include space categorized by CoStar as "vacant" as well as "unleased" space. The main difference in these categorizations is that vacant space is actively on the market, while unleased space may not be actively seeking tenants.

**Figure VIII-11. Retail Inventory by Year Built**



**Retail Inventory by Year Built, September 2017**

**Year Built**

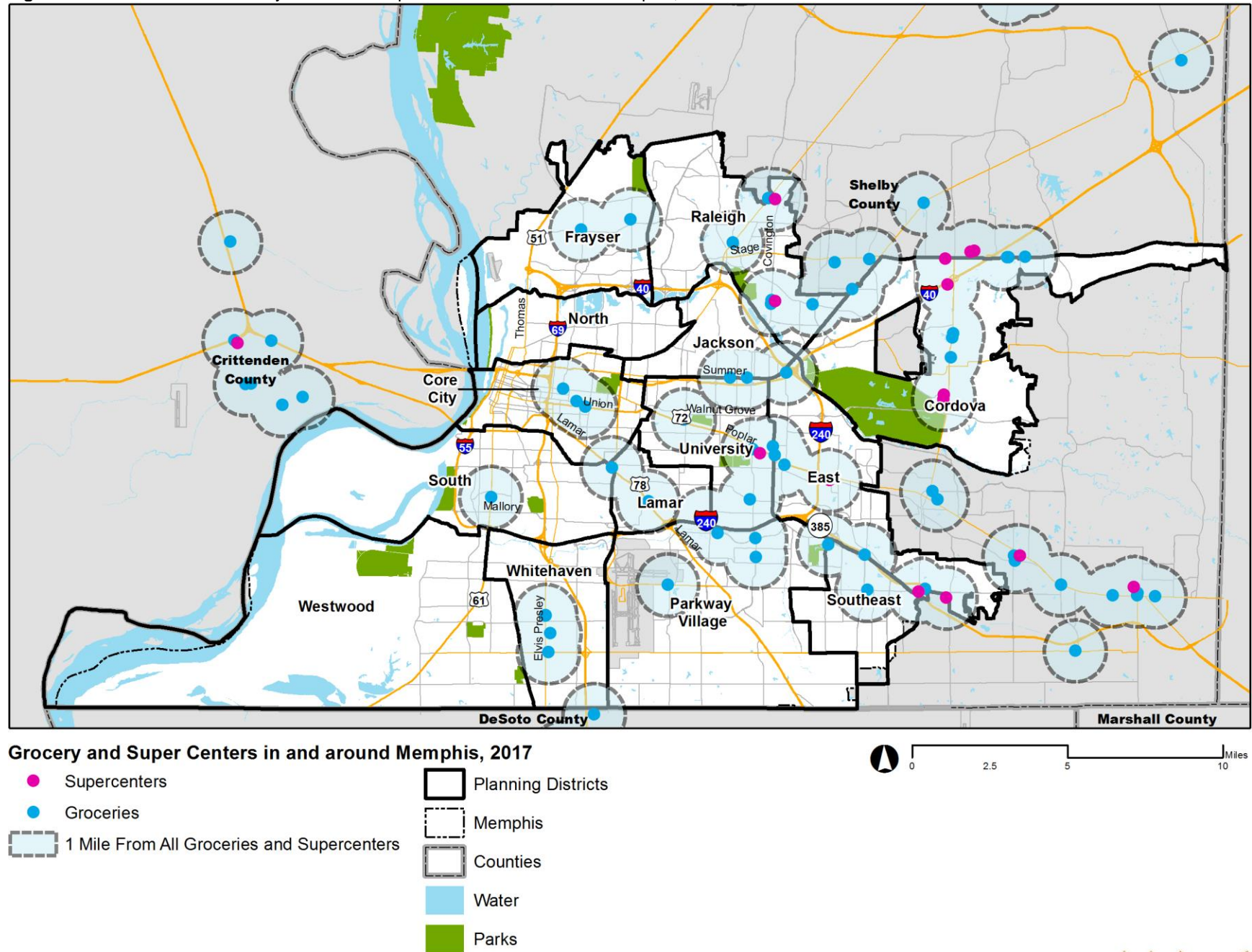
- 1829 - 1930
- 1931 - 1950
- 1951 - 1970
- 1971 - 1990
- 1991 - 2010
- ★ 2011 - 2017

- Planning Districts
- Memphis
- Counties
- Water
- Parks



Sources: CoStar, September, 2017; Strategic Economics, 2017.

**Figure VIII-12.** Full-Service Grocery Stores and Super Centers in and around Memphis, 2017



Sources: City of Memphis, 2017; Google Maps, 2017; Strategic Economics, 2017. This map is based on data collected from public online resources and may need to be augmented based on community input.

## ACCOMMODATION LAND USES AND INVESTMENT

**Figure VIII-13** provides a map of employment in the accommodation and food services sectors. **Figure VIII-14** summarizes the hotel inventory in Memphis and the nine-county MSA by year built. **Figures VIII-14** and **VIII-15**, respectively, shows the location of hotels in Memphis by size (number of rooms) and year built. Key findings about the hotel market are discussed below.

**Whereas retail location decisions tend to be closely tied to household locations, hotel locations are typically based on tourism and business travel.** In Memphis, business travel is driven by the logistics and warehousing sector. The city also attracts substantial tourism related to visitor such as Beale Street, the National Civil Rights Museum, Stax Museum of American Soul Music, Mud Island, the Peabody Ducks, the Rock and Soul Museum, and Graceland.<sup>70</sup>

**Memphis' hotel market is healthy.** Overall hotel market indicators are strong, with average occupancy rates 65 percent since 2014, which is considered a healthy vacancy rate. Average daily rates have risen steadily since the end of the recession.<sup>71</sup> The city accounts for nearly 70 percent of the region's total hotel room inventory, and 65 percent of rooms built since 2010 (**Figure VIII-14**).

**Existing hotels are clustered in Downtown, around the airport, and near employment concentrations in East, Cordova, and Southeast.** The Downtown cluster tends to cater towards tourist and convention travel. The cluster of hotels near the airport (along I-240) in Whitehaven and Parkway Village serves business travels related to logistics and warehousing. Business-serving hotels are also clustered near employment concentrations in East Memphis (along the Poplar Avenue corridor), Cordova (the I-40 corridor), and Southeast (along Highway 385, also known as the Memphis Technology Corridor).<sup>72</sup>

**There is significant hotel development in the pipeline, with most of the development expected to occur in Downtown.** The Downtown hotel market is booming, with approximately 15 new hotels (mostly smaller, limited-service hotels with no more than 120 rooms) and 3,000 new rooms planned for the area. This amount of development would approximately double Downtown's existing inventory. Additional major projects are planned in East Memphis and near Graceland (the 450-room Guest House at Graceland).<sup>73</sup>

**While the amount of supply in the pipeline may be more than sufficient to meet overall demand, the Memphis Convention and Visitors Bureau has identified a need for large hotel properties that can support the convention center.** CBRE projects that the level of development in the pipeline may exceed demand, leading to declining occupancy rates as new projects come online.<sup>74</sup> This suggests that some of the development that is currently planned may not be built in this market cycle. At the same time, however, the Memphis Convention and Visitors Bureau and other industry stakeholders have identified a need for larger, full-service hotels with the capacity to host conventions.<sup>75</sup>

<sup>70</sup> CBRE, "Hoteliers thrive as logistics and warehousing industry drive business travel to Memphis," 2017 Southeast U.S. Real Estate Market Outlook," 2017.

<sup>71</sup> Ibid.

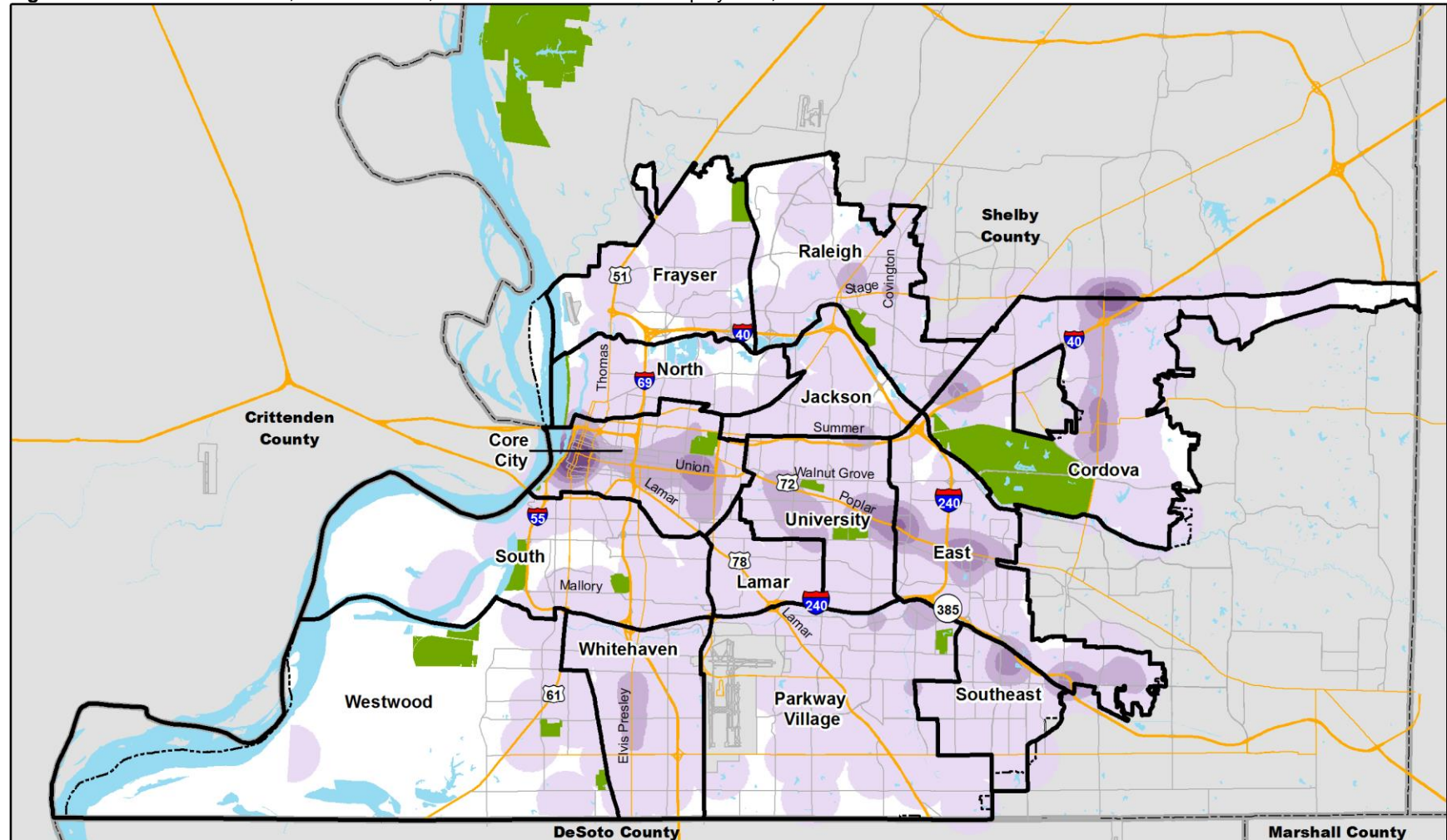
<sup>72</sup> Ibid.

<sup>73</sup> Elle Perry, "Downtown hotel market is hot – with one big exception," *Memphis Business Journal*, May 26, 2017, <https://www.bizjournals.com/memphis/news/2017/05/26/cover-story-downtown-hotel-market-is-hot-with-one.html>; Michael Waddell, "Memphis hoteliers enjoying strong performance, healthy development pipeline," *The Daily News*, September 17, 2016, <https://www.memphisdailynews.com/news/2016/sep/17/hospitable-market/>.

<sup>74</sup> CBRE, 2017.

<sup>75</sup> Ibid.

**Figure VIII-13.** Accommodation, Food Services, and Arts and Recreation Employment, 2014



**Accommodation, Food Service, Arts and Recreation Employment**

**Jobs Per Square Mile**



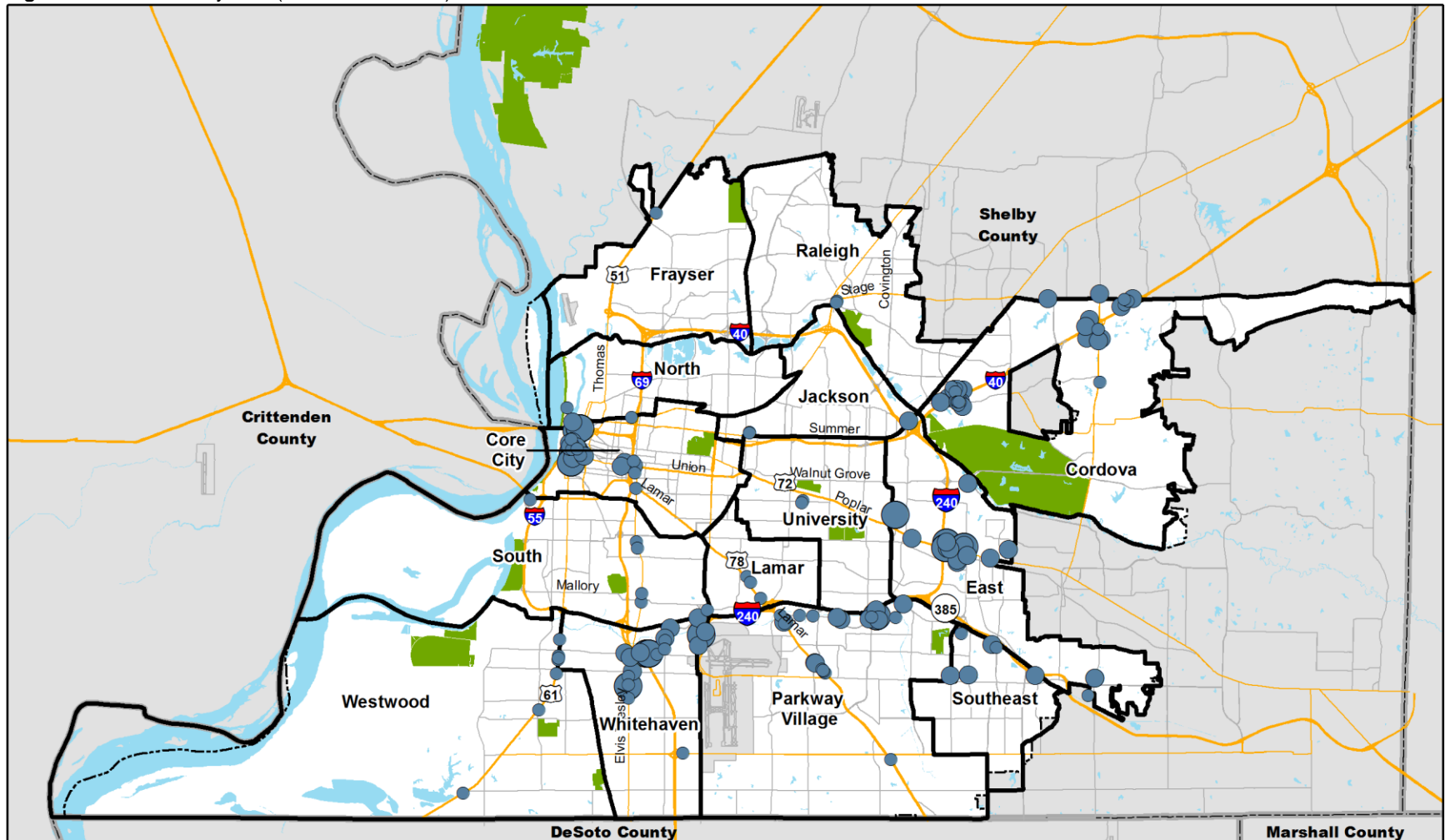
Source: Longitudinal Household Employment Dynamics, 2014; Strategic Economics, 2017.

**Figure VIII-14.** Hotel Inventory by Year Built, City of Memphis and the Nine-County MSA, 2017

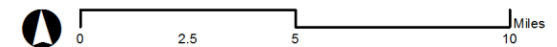
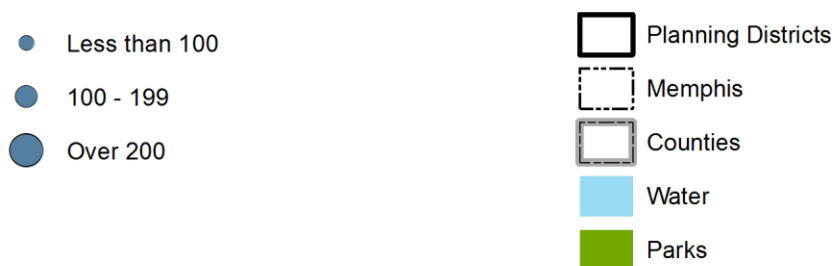
Year Opened	City of Memphis		Memphis MSA		City as a % of MSA
	Rooms	% of Total	Rooms	% of Total	
1950 - 1969	1,072	7%	1,307	6%	82%
1970 - 1989	7,264	47%	8,513	37%	85%
1990 - 2009	5,823	37%	10,837	47%	54%
2010 - 2017	963	6%	1,663	7%	58%
Unknown	455	3%	705	3%	65%
<b>Total</b>	<b>15,577</b>	<b>100%</b>	<b>23,025</b>	<b>100%</b>	68%

Sources: STR Global, 2017; Strategic Economics, 2017.

**Figure VIII-15. Hotels by Size (Number of Rooms)**

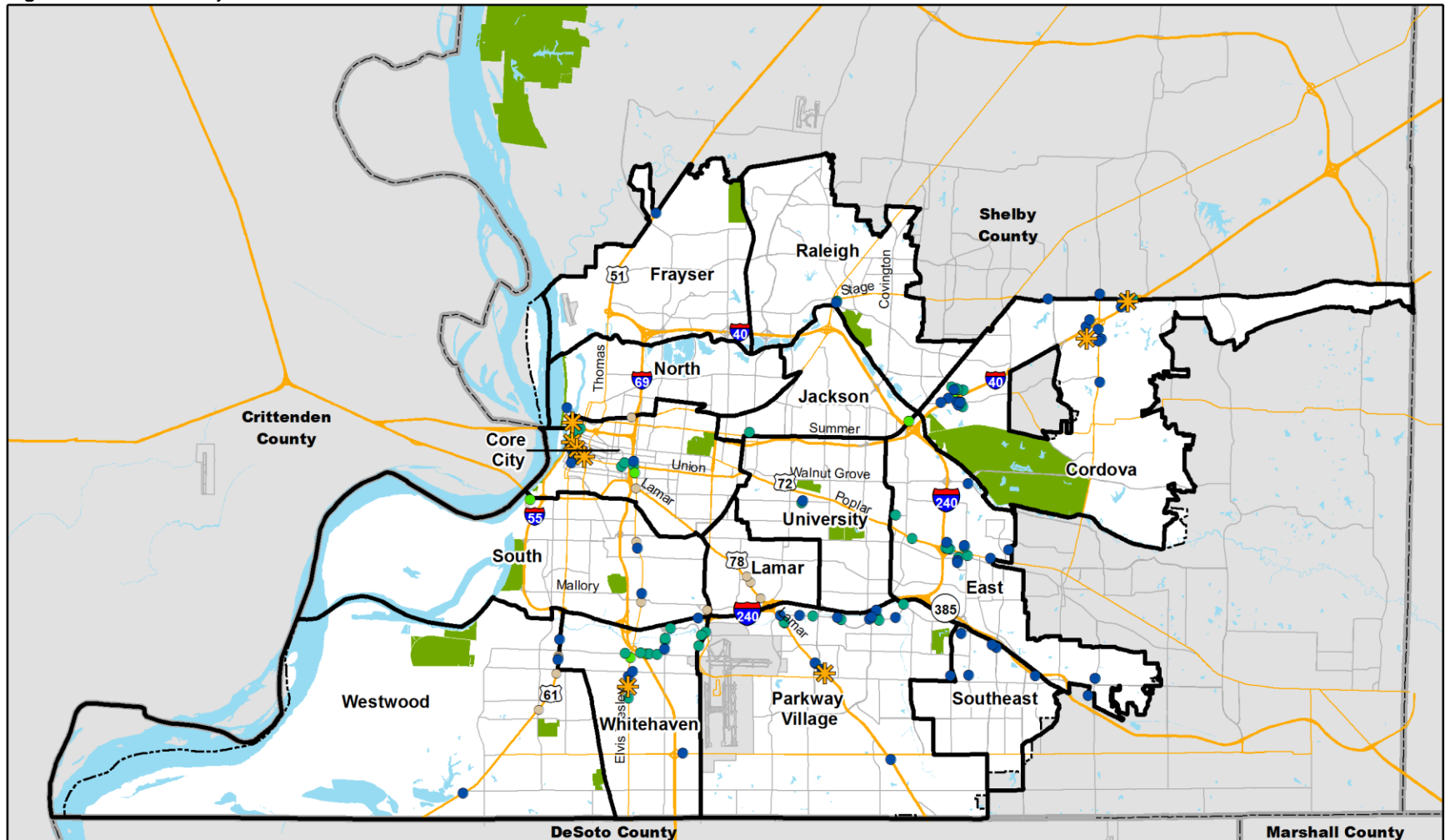


**Hotels by Number of Rooms: City of Memphis**



Sources: STR Global, 2017; Strategic Economics, 2017.

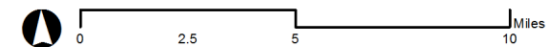
**Figure VIII-16. Hotels by Year Built**



**Hotels by Year Opened: City of Memphis**

- 1950-1969
- 1970-1989
- 1990-2009
- ★ 2010-2017
- Unknown

- Planning Districts
- Memphis
- Counties
- Water
- Parks



Sources: STR Global, 2017; Strategic Economics, 2017.

## **ROLE OF INCENTIVES**

The Memphis region frequently provides economic incentives to encourage business growth, retention, and real estate investment. This section focuses on two commonly used subsidies: Payments in Lieu of Taxes (PILOTs) and tax increment financing (TIFs) districts. Both of these tools have a direct impact on the City's tax base.

Note that because the City does not maintain a comprehensive list of development projects, it is unclear what share of the projects currently in the development pipeline are receiving subsidies.

### **PILOTs**

A PILOT is a partial property tax abatement for a pre-set period of time, typically up to 15 years. During the term of the PILOT, the applicant receives subsidies in the form of discounted property tax payments. The City and County continue to receive a percentage of the total property tax due. At the end of the PILOT term, the value of the assessment is higher than before the PILOT was issued due to the improvements made on the property, and the City and County receive the full amount of property taxes due.

There are three organizations that are authorized to issue PILOTs in Memphis: The Downtown Memphis Commission (DMC); Memphis/Shelby County Economic Development Growth Engine (EDGE); and the Health, Educational, and Housing Facility Board. Each of the agencies uses PILOTs differently to accomplish its mission and objectives, as described below.

#### **Health, Educational, and Housing Facility Board**

The agency issues revenue bonds for the development and rehabilitation of public facilities, such as hospitals, schools, and multi-family housing for lower income households, seniors, and disabled persons. Though it is authorized to issue PILOTs, the Board currently has no active PILOT program. Applicants seeking a PILOT must first obtain approval from the Shelby County Mayor and the Shelby County Board of Commissioners.

#### **Downtown Memphis Corporation**

The Center City Revenue and Finance Corporation, an affiliate of DMC, is the Industrial Development Board with authority to grant PILOTs in the Downtown area. The purpose of the program is to increase employment opportunities and housing in the Downtown area by encouraging high-quality, catalytic projects. Projects must be located within the Central Business Improvement District (CBID) or within the Parkways. The following types of projects are not eligible for PILOT incentives: for-sale residential, development projects already under construction, and most industrial projects. To receive a PILOT, the project applicant must submit financial information demonstrating that the development would not be feasible without the incentive (a "but for" test).

Most PILOTs have a maximum term of 15 years, with some exceptions. Using a point system, DMC can increase the term of the PILOT based on the following factors:

- Project size, as measured by number of units, number of hotel rooms, and square feet of commercial space.
- Project location, favoring locations within the CBID, or in targeted areas such as the Main Street Mall, the Edge, South City Impact Area, the Pinch, and economically distressed areas.
- Renovation of historic structures.
- Enhanced design features, such as LEED certification or Net Zero certification.

PILOT applicants must also comply with the Equal Business Opportunity Program, making a “best-faith” effort to allocate at least 20 percent of professional and construction services to Minority/Women Business Enterprises.

## **EDGE**

The EDGE Industrial Development Board is authorized to issue PILOT incentives for industrial projects (manufacturing facilities), pollution control projects, distribution facilities, office buildings, multi-family residential projects, and major tourism projects. EDGE has defined six different types of PILOT programs, each with its own purpose, as described below.

1. **Community Builder:** Designed to create jobs in distressed areas. Eligible project types include retail, office, industrial and distribution centers. There is no minimum investment amount or job target for these PILOTs.
2. **Destination Retail:** Focused on attracting large scale retail development. To be eligible, projects must create at least 100 net new jobs, with a capital investment of at least \$50 million.
3. **Expansion:** Targeted to growing existing firms in the industrial, distribution, and office sectors. Projects must create at least 100 net new jobs to be eligible, with a minimum capital investment of \$10 million.
4. **Fast Track:** Focused on generating new investment of at least \$1,000,000 and 25 net new jobs.
5. **Jobs:** Targeted to creating new jobs, with a minimum of \$1 million in investment and 15 net new jobs.
6. **Residential:** Designed for investment in market-rate multi-family rental projects. There is no minimum investment amount or job target for these PILOTs.

The Board does not provide PILOTs to projects under construction, speculative projects (untenanted commercial development), or general retail projects. In accordance with state law, projects receiving PILOTs must increase employment within Tennessee, and evaluated based on the following criteria:

- Number of new jobs created or retained.
- The scale of the capital investment.
- Jobs must provide wages of at least \$12 per hour, and the employer must cover at least 50 percent of the cost of health insurance.
- Participation from local and Minority/Women Business Enterprises (MWBE) amounting to 25 percent of construction costs and 15 percent of PILOT savings.
- The public revenue to the city and county must be greater than the public cost of the incentive (benefit-cost ratio).

To receive a PILOT, the project applicant must also submit financial information demonstrating that the development would not be feasible without the incentive (a “but for” test). The maximum term of a PILOT is 15 years. For projects in Memphis, the maximum PILOT abatement is 75 percent of County property taxes and 90 percent of City property taxes.

## **Analysis of PILOTs**

The following are major findings based on an analysis of PILOT incentives granted by DMC and EDGE from 2011 to 2017.

- From 2011 to 2017, DMC and EDGE provided an average of \$3.2 million and \$35.6 million a year, respectively, in PILOT incentives in Memphis (**Figure VIII-17**). The average term of the PILOTs was 13 years for DMC and 10 years for EDGE. In 2013, the advocacy group Good Jobs

First estimated that the annual cost of PILOTs to the City was \$42 million, or about 14 percent of the City's property tax base.<sup>76</sup>

- The average ratio of project cost to PILOT incentive was \$8.88 for DMC and \$6.69 for EDGE. In other words, each dollar of the PILOT subsidy supported an average of \$8.88 in total investment for DMC, and \$6.69 in total investment for EDGE (**Figure VIII-17**).
- All of the EDGE PILOT incentives issued from 2011 to 2017 totaled \$350 million and generated 11,373 jobs, according to EDGE's estimates. Using these figures, the incentive per job was \$30,766.
- Nearly half of all jobs supported through EDGE's PILOT investments have an average annual wage of \$40,000 or less. Another 27 percent of jobs had annual wages of over \$75,000. Most of the jobs paying more than \$75,000 are located at the headquarters for International Paper, which has an average payroll of \$93,225 (**Figure VIII-18**).
- PILOT incentives are mostly concentrated in districts with existing employment concentrations, such as Parkway Village, East, and Core City. Raleigh and South Districts have also received a significant amount of PILOT incentives (**Figures VIII-19 and VIII-20**). While DMC's PILOTs are concentrated in the Core City, EDGE's PILOTs tend to be focused in the industrial areas of Memphis (**Figure VIII-20**)

**Figure VIII-17.** Summary of PILOT Incentives Issued in Memphis from 2011-2017

	DMC	EDGE
Average Annual PILOT (Incentive)	\$3,214,585	\$35,662,639
Annual Investment (Project Cost)	\$28,547,521	\$238,473,547
Average Term of PILOT	13	10
Average Ratio of Cost to Incentive	\$8.88	\$6.69

Source: Downtown Memphis Commission, 2017; Economic Development Growth Engine, 2017

**Figure VIII-18.** EDGE PILOT Incentives by Average Annual Wages, 2011-2017

Average Annual Wages	Number of Jobs	% of PILOTS
\$20,000 - \$30,000	839	7%
\$30,000 - \$40,000	4,946	43%
\$40,000 - \$50,000	995	9%
\$50,000 - \$60,000	831	7%
\$60,000 - \$75,000	653	6%
Over \$75,000**	3,109	27%
<b>Total</b>	<b>11,373</b>	<b>100%</b>

\* Source: EDGE Memphis, 2017

\*\* Note: One PILOT recipient, International Paper, accounts for 2,375 jobs (101 new, 2274 retained) with an average payroll of \$93,225

<sup>76</sup> Estimate of the total cost of tax abatements to the City of Memphis; this figure does not account for whether the incentivized economic activity would have occurred in the absence of the PILOT. Thomas Cafcas, Kasia Tarczynska, Philip Mattera, and Greg LeRoy, "Memphis Blues: How Corporate Property Tax Breaks and Stadium Subsidies are Sapping the City's Fiscal Strength," Good Jobs First, June 2014.

**Figure VIII-19. Annual PILOT Incentives by Planning District, 2011-2017**

Planning District	Percent. Of Annual PILOTs
Cordova	0.3%
Core City	15.3%
East	16.1%
Frayser	1.0%
Jackson	0.0%
Lamar	0.2%
University	1.8%
North	1.8%
Parkway Village	22.7%
Raleigh	12.7%
South	10.8%
Southeast	3.9%
Westwood	7.9%
Whitehaven	5.5%
<b>Total</b>	<b>100.0%</b>

Source: Downtown Memphis Commission, 2017; Economic Development Growth Engine, 2017

## Tax Increment Financing Districts

A tax increment financing district (TIF) reinvests the increases in property tax revenue generated from redevelopment (the tax increment) into the project or district. TIFs can help to recover the costs associated with project development. They can also help fund other specifically defined improvements like public infrastructure, parking and – with state approval – privately owned facilities. TIF terms are typically up to 20 years. The percentage of the increment that goes into the TIF district is usually between 50 and 75 percent.

There are five existing tax increment financing districts in the city of Memphis. They are authorized by two different organizations: EDGE and the Community Redevelopment Agency. The TIF districts are located in Uptown Memphis in North and Core City; the Binghampton neighborhood (around Broad Avenue) in Core City and the University planning districts; Graceland in Whitehaven; and Highland Row and University District-Highland Strip in University. **Figure VIII-20** shows the locations of the existing TIF districts (note that the Highland Row and University District-Highland Strip TIF districts in University are contiguous).

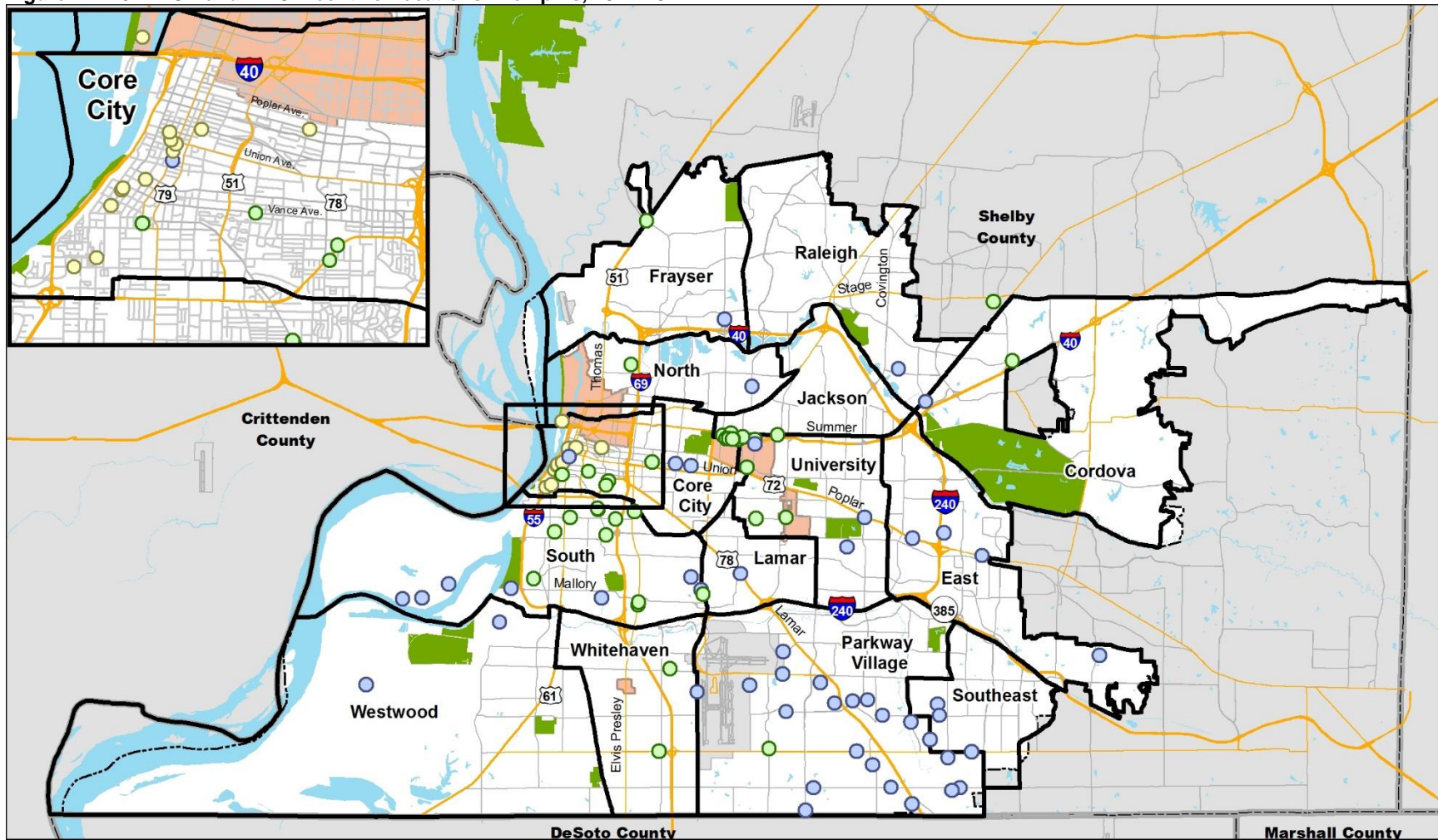
## Loans and Grants

While most of the region's economic development efforts are targeting recruitment and retention of large businesses, there are also some programs targeted and supporting small businesses. These programs are discussed in more detail in Chapter VII.

**Figure VIII-20** shows the location of the loans that EDGE has granted since 2011, including Inner City Economic Development loans (focused on revitalization of neighborhood business districts in the core through three-year, forgivable loans of up to \$25,000) and EDGE Impact Fund loans (which offers SBA-guaranteed loans of \$150,000 or more to businesses in operation for at least three years in Shelby County). Whereas EDGE's PILOTs are clustered around existing employment centers, including along the Poplar Avenue corridor and in the industrial areas around the airport, the small business loans are clustered in neighborhood business districts, including in the South planning district and the Broad Avenue corridor on the border between Core City, University, and Jackson.

DMC's Center City Development Corporation also issues low-interest loans for façade improvements, building renovations, and other real estate investments, as well as matching grants for exterior improvement to businesses. Per the organization's mandate, these grants and loans (not shown) are located within the Parkways, with a particular focus on Downtown.

Figure VIII-20. EDGE and DMC Incentive Locations: Memphis, 2011-2017

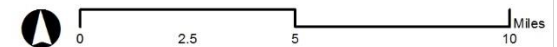


EDGE and DMC Incentive Locations, Memphis, 2011 - 2017

Incentive Type

- EDGE Loans
- EDGE PILOTs
- DMC PILOTs
- TIF Districts

- Planning Districts
- Memphis
- Counties
- Water
- Parks



Sources: Downtown Memphis Commission, 2017; Economic Development Growth Engine, 2017; Strategic Economics, 2018.

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## IX. PUBLIC INFRASTRUCTURE

Memphis' infrastructure systems, including the city's freight transportation systems and water supply, offer several competitive advantages for economic growth. At the same time, there are significant infrastructure needs that pose challenges for continuing to grow and diversify the economy. This chapter provides an overview of Memphis' major infrastructure assets and needs from an economic development perspective, and describes where new public infrastructure investment is planned.

### INFRASTRUCTURE ASSETS AND NEEDS

The following sections summarize some of the city's key infrastructure assets and needs, and lists key studies and plans that are either underway or have been recently completed, related to the following types of infrastructure systems:

- Transportation (air, river, rail, road, and transit);
- Water, electricity, and sewer utilities;
- Broadband access; and
- Complete streets, storm water, and green infrastructure.

Other background documents prepared for Memphis Comprehensive Plan 3.0 process examine transit, complete streets, energy efficiency, and storm water and resilience issues in more detail.

#### Transportation

Memphis' freight infrastructure – including air, river, rail, and road systems – are key assets that set it apart from other regions in the country. Memphis International Airport is the busiest cargo airport in North America, and the second-busiest in the world. The Port of Memphis is among the largest ports on the Mississippi River system. The region is also served by three major highways (I-55, I-40, and US-78). Interstate-69 – a planned highway that is intended to someday extend from Canada to Mexico – will run through Memphis. The region is also served by all six major North American rail operators (BNSF, CN, CSF, Norfolk Southern, and Union Pacific). Previous economic development strategies have identified continued investment in the region's intermodal freight transportation system as critical to the continued success of the transportation and logistics cluster, and to the expansion of foreign exports from Memphis.<sup>77</sup>

While freight transportation is one of the region's strengths, there are significant challenges with passenger transportation. After Delta Air Lines' purchase of Northwest Airlines in 2008, the Memphis airport gradually lost its international service and status as a passenger hub. As a result of reduced service, passenger count declined steadily through 2015, although efforts to attract airlines and new routes to Memphis began to result in increased counts in 2016.<sup>78</sup> The limited passenger service to the airport is a challenge for recruiting headquarters and other office users, and for expanding convention and tourist travel.

<sup>77</sup> Randall Gross/Development Economics, "Part 1: Background & Target Industry Report," *Comprehensive Economic Development Strategy (CEDS)*; The Brookings Institution and EDGE, *Memphis & Shelby County Regional Economic Development Plan*, September 2014.

<sup>78</sup> Randall Gross/Development Economics, "Part 1: Background & Target Industry Report," *Comprehensive Economic Development Strategy (CEDS)*.

The quality of the region's transit system also poses a challenge for economic development. The Memphis Area Transit Authority (MATA) has significantly reduced its service since the mid-2000s, due to lack of funding. Compounding the challenge, many job centers and residential neighborhoods are very low density, making them difficult to serve efficiently. As of 2017, only a few bus routes offer 30-minute frequency, and only one offers 20-minute frequency; only the trolleys in the Downtown area offer service every 15 minutes. Frequencies are extremely low in the evenings and weekends, creating particular challenges for retail and restaurant workers, other workers with late or weekend shifts, students taking evening classes, and others. While the Downtown and Poplar Avenue corridor are relatively well connected, other job centers have very limited transit access, as do most low-income neighborhoods. In addition, there are no transit connections to northern Mississippi – an increasingly important location for manufacturing, transportation, and logistics jobs.<sup>79</sup>

### *Relevant Plans and Studies*

- The *Memphis Aerotropolis Airport City Master Plan* includes intermodal policies, strategies and concepts for improving the safety and efficiency of moving people and freight within the 25-mile radius around the airport.
- Jarrett Walker + Associates is currently leading a study of the future of the transit network, as part of the Memphis Comprehensive Plan 3.0 process.
- The Memphis Metropolitan Planning Organization (MPO) prepares the region's multimodal transportation plans, including the Long Range Regional Transportation Plan (RTP), which guides the decision-making process for the selection and implementation of transportation projects in the Memphis MPO area; and the short-range Transportation Improvement Program (TIP) which lists each transportation project planned for the Memphis MPO area within a four-year timeframe. Projects included in the RTP and TIP are discussed in more detail below, under Planned Infrastructure Investments.
- The City of Memphis completed a Complete Streets Project Delivery Manual in 2013, as in the process of creating a Roadway Regulatory Plan to guide implementation. These are discussed below under Complete Streets and Green Infrastructure.

## Electricity, Water, and Sewer

Memphis Light, Gas and Water (MLGW) provides electricity, gas, and water service to the region. As discussed in previous chapters, the region's abundant, high-quality, low-cost water supply (pumped from an underwater aquifer system) is an asset for manufacturers. MLGW purchases electricity from the Tennessee Valley Authority (TVA).

MLGW has some of the lowest utility rates in the country. However, an April 2016 study by the American Council for an Energy Efficient Economy (ACEEE) found that the Memphis metro area has one of the highest energy burdens in the country for low-income households and people of color (measured as a percentage of income used to pay for electricity, gas, and/or other heating fuel). Given the region's low utility rates, the high energy burden appears to reflect low household incomes on the one hand, and the poor condition of the housing stock on the other. The Center for Neighborhood Technology has estimated

<sup>79</sup> Jarrett Walker + Associates, *Memphis 3.0 Transit Vision Choices Report*, prepared for Innovate Memphis and the City of Memphis, September 25, 2017.

improving efficiency and reducing household expenses for water, energy, and transportation would result in savings of \$1,500 per household.<sup>80</sup>

The City of Memphis Public Works Department provides sewer service in Memphis. Historically, expansion of the sewer system (as well as roads and other infrastructure) outside the city boundaries helped support the outward migration of households and businesses. These service expansions resulted in a large, thinly populated service area, making maintenance more challenging and costly. At the same time, the city's wastewater collection and transmission system is aging, with much of it built more than 100 years ago. In 2012, the City entered into a Consent Decree with the U.S. Department of Justice/U.S. Environmental Protection Agency and the State of Tennessee to address sanitary sewer overflows. The City is expecting to spend over \$500 million implementing the Consent Decree and making other upgrades and rehabilitation to its two wastewater treatment plants by 2025. In recognition of these challenges, the City announced in August 2017 that it would no longer extend the sewer system outside of the municipal boundaries.<sup>81</sup>

#### *Relevant Plans and Studies*

- The Public Works Department is currently conducting an assessment of sanitary sewer capacity, and developing a Sewer Master Plan.

## Broadband Access

A 2016 study by the Tennessee Department of Economic and Community Development (TNECD)<sup>82</sup> found that Shelby County was one of the top counties in the state in terms of broadband Internet access, with Internet that meets the FCC's definition of broadband (25 megabits per second download and 3 Mbps upload speeds) available to 97 percent of the population. AT&T now offers 1 Gigabit per second fiber optic internet service in parts of the city. Households and businesses surveyed by the TNECD in the Memphis metro area also ranked highly for Internet utilization.

However, there is a significant divide in Internet access among lower and higher income Memphians. According to the American Community Survey, 75 percent of households in the Memphis metro area making more than \$20,000 a year had broadband Internet access in their homes in 2015, compared to 38 percent of households making less than \$20,000 a year.<sup>83</sup> Many low-income households without a computer connected to the Internet likely use smartphones instead, and/or access the Internet at the library or other community facilities.

## Complete Streets, Storm Water, and Green Infrastructure

The City has implemented several policies to support complete streets, including a Complete Streets Project Delivery Manual and a Roadway Regulatory Plan that assigns a functional typology to all the roadways in

<sup>80</sup> CNT Memphis Center of Prosperity and Empowerment, "An Efficient Memphis and a Shared Future, October 10, 2013.

<sup>81</sup> City of Memphis, "Sanitary Sewer Policy – Services to areas Outside City of Memphis Limits," August 18, 2017, [http://memphistn.gov/Portals/0/pdf\\_forms/Administration-Sewer-Policy-2017-kv-final-edit.pdf](http://memphistn.gov/Portals/0/pdf_forms/Administration-Sewer-Policy-2017-kv-final-edit.pdf); City of Memphis Public Works Department, "Consent Decree," <http://www.memphistn.gov/Government/Public-Works/Consent-Decree>.

<sup>82</sup> Department of Economic and Community Development, *Internet Connectivity and Utilization in Tennessee 2016*, June 2016, <file:///C:/Users/anemirow/Downloads/broadband-study.pdf>.

<sup>83</sup> Mike Maciag, "Where the Digital Divide is the Worst," September 7, 2017, <http://www.governing.com/topics/transportation-infrastructure/gov-digital-divide-low-income-households.html>.

the city. Complete streets improvements – such as reduced speed limits, narrowed lanes, wider sidewalks, more frequent pedestrian crossings, curb extensions, and new bike lanes – improve quality life and safety for pedestrians, bicyclists, and other travelers, and have also been shown to increase retail sales and commercial rents.<sup>84</sup> However, while the City has started to put the regulatory framework in place to make complete streets improvements, there is limited availability of Public Works staff and funding for project design and implementation.

The City is also working to address significant flooding risk along the tributaries to the Mississippi River, as well as reducing water pollution caused by storm water runoff.

#### *Relevant Plans and Studies*

- The 2015 *Mid-South Regional Greenprint* is a 25-year plan covering four counties, that establishes a regional vision for a network of parks, conservation areas, farmland, waterways, greenway trails, and complete streets that are intended to achieve multiple benefits including improving accessibility, providing recreational opportunities, mitigating water and air pollution, and supporting economic development.
- In January 2016, Shelby County was awarded \$60 million 163 in federal funds for its *Greenprint for Resilience* projects, which include a regional resilience plan and flood resilience activities in three of the areas that were hardest hit by flooding in 2011. Two of the three projects are in Memphis, including the Wolf River Wetland Restoration and Greenway project, which will re-establish wetlands and other floor storage and allow for the completion of the Wolf River Greenway connection, upgrades to two local parks, and creation of a green street; and the South Cypress Creek project, which will address flood risk, vacancy, and blight in a low-income community in southwest Memphis.
- The City’s Complete Streets Project Delivery Manual (CSPDM) formalize the design and project development process for transportation and public space investments throughout the city to ensure that accommodations for safe travel by all modes are made.
- The Roadway Regulatory Plan assigns a functional classification to all the roadways in the city (e.g., “thoroughfare” or “connector”) in order to facilitate implementation of the CSPDM.

<sup>84</sup> G. Hack, “Business Performance in Walkable Shopping Areas” (Princeton, NJ: Active Living Research, a National Program of the Robert Wood Johnson Foundation, 2013), <http://activelivingresearch.org/business-performance-walkable-shopping-areas>; New York City Department of Transportation, “Economic Benefits of Sustainable Streets,” New York City Department of Transportation, 2013; Christopher B. Leinberger and Mariela Alfonzo, “Walk This Way: The Economic Promise of Walkable Places in Metropolitan Washington, D.C.” (Brookings Institution, May 2012), <http://www.brookings.edu/research/papers/2012/05/25-walkable-places-leinberger..>

## PLANNED INFRASTRUCTURE INVESTMENTS

The City of Memphis prepares an annual Capital Improvement Program (CIP), a five-year plan of public improvements and the associated costs. The CIP includes all major improvements or acquisitions costing over \$50,000 that will last 10 years or more. The CIP lists each proposed capital project to be undertaken, including the projected start date, the amount to be expended in each year, and the proposed method of financing.

The City's total CIP budget is \$162 million for FY 2018, and \$1.136 billion over five years. This includes \$444.7 million carry forward funds, or unspent allocations from the prior years' approved CIP plan that could not be allocated within the prior year because the timeframe for completion is greater than one year.

**Figure IX-1** summarizes projected funding and financing sources by year. Major sources include:

- **General Obligation (G.O.) Bonds (Long-Term Debt):** G.O bonds are repaid by the property tax rate charged to residents. Excluding G.O. bonds for Storm Water, G.O. bonds account for 50 percent of the FY 2018 CIP budget and 40 percent of five-year total.
- **Capital Pay Go:** "Capital Pay Go" allocations represent internally generated funds. Capital Pay Go represents 36 percent of FY 2018 funds and 16 percent of the five-year total.
- **Federal and state grants:** Federal grants represent 13 percent of the FY 2018 CIP budget, and 16 percent of the five-year total. The majority of federal funds are for MATA projects and Public Works projects that qualify for federal grants. State grants represent the state-matching portion of MATA and Public Works projects.

**Figure IX-2** summarizes CIP expenditures by division. Some of the highlights of the 2018 CIP include:

- **Sewer Fund projects:** The Sewer Fund has the largest total allocation of funds. Sewer Fund current projects are funded by Capital-Pay-Go or Clean Water State Revolving Fund (CWSRF) loans. CWSRF loan is a line of credit which is available for the planning, design, and construction phases of wastewater facilities. The City currently has two active CWSRF loans. The first loan is for \$22 million, for modifications and expansions at the M.C. Stiles Wastewater Treatment Facility and the T.E. Maxson Wastewater Treatment Facility. The second loan is for \$100 million and is associated with the sewer rehabilitation of the City of Memphis' collection system.
- **Memphis Area Transit Authority (MATA):** MATA is receiving \$6.9 million from G.O. Bonds in FY 2018 (plus federal and state matching funds) for continuing enhancement and upgrades to the APTS/ITS system, replacing fare collecting equipment, and purchasing and renovating rail vehicles.
- **Public Works:** Within the Public Works division, there is a continued emphasis on road paving.
- **Housing and Community Development:** This line includes funding for MHA Foote-Future Hope VI project, which will replace the last public housing project in the city (Foote Homes).

**Figure IX-1: City of Memphis FY 2018-22 Capital Improvement Program: Funding/Financing Sources**

Source	Carry Forward*	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Total
General Obligation Bonds	\$58,314,644	\$81,315,504	\$94,266,735	\$109,894,703	\$78,399,416	\$46,887,348	\$469,078,350
Capital Pay Go	\$235,384,032	\$59,100,000	\$37,900,000	\$38,880,000	\$42,880,000	\$41,380,000	\$455,524,032
Federal Grants CIP	\$123,568,377	\$21,922,980	\$9,421,323	\$12,680,000	\$16,685,377	\$0	\$184,278,057
Sewer Revenue Bonds	\$16,819,962						\$16,819,962
State Grants	\$8,597,000						\$8,597,000
Local CIP	\$1,983,209						\$1,983,209
<b>Total</b>	<b>\$444,667,224</b>	<b>\$162,338,484</b>	<b>\$141,588,058</b>	<b>\$161,454,703</b>	<b>\$137,964,793</b>	<b>\$88,267,348</b>	<b>\$1,136,280,610</b>

\*Projects allocated in previous years' Capital Budgets, that have been delayed, may be carry forward, according to the priorities of the administration for spending in the new plan. These funds are the unspent allocations from the prior years' approved CIP plan that could not be allocated within the prior year because the timeframe for completion is greater than one year.

Source: City of Memphis Capital Improvement Program, 2018-2022 Fiscal Years.

**Figure IX-2: City of Memphis FY 2018-22 Capital Improvement Program: Expenditures by Division**

Division	Carry Forward*	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Total
Sewer Fund	\$266,200,794	\$59,100,000	\$37,900,000	\$38,880,000	\$42,880,000	\$41,380,000	\$486,340,794
Public Works	\$120,305,078	\$46,289,548	\$33,487,403	\$38,650,000	\$43,656,722	\$22,800,000	\$305,188,751
MATA	\$7,722,771	\$6,927,000	\$13,524,500	\$22,051,000	\$14,185,500	\$3,430,500	\$67,841,271
Police	\$12,459,200	\$5,053,500	\$13,479,000	\$25,832,000	\$8,772,000	\$1,200,000	\$66,795,700
General Services	\$0	\$20,905,589	\$6,500,000	\$6,500,000	\$6,500,000	\$6,500,000	\$46,905,589
City Engineering	\$19,693,230	\$4,143,432	\$3,873,618	\$2,889,000	\$3,839,000	\$3,749,000	\$38,187,280
Fire	\$930,880	\$2,817,748	\$8,256,871	\$13,582,703	\$6,481,571	\$3,557,848	\$35,627,621
Parks	\$1,100,000	\$5,280,000	\$5,650,000	\$5,650,000	\$5,650,000	\$5,650,000	\$28,980,000
Housing & Community Development	\$300,000	\$6,250,000	\$8,750,000	\$6,000,000	\$6,000,000	\$0	\$27,300,000
Library Services	\$0	\$1,000,000	\$8,250,000	\$1,420,000	\$0	\$0	\$10,670,000
River Front Development	\$7,022,218	\$0	\$0	\$0	\$0	\$0	\$7,022,218
Storm Water	\$6,933,053	\$0	\$0	\$0	\$0	\$0	\$6,933,053
Information Systems	\$0	\$4,321,667	\$1,916,666	\$0	\$0	\$0	\$6,238,333
Finance	\$2,000,000	\$0	\$0	\$0	\$0	\$0	\$2,000,000
Executive	\$0	\$250,000	\$0	\$0	\$0	\$0	\$250,000
<b>Total</b>	<b>\$444,667,224</b>	<b>\$162,338,484</b>	<b>\$141,588,058</b>	<b>\$161,454,703</b>	<b>\$137,964,793</b>	<b>\$88,267,348</b>	<b>\$1,136,280,610</b>

\*Projects allocated in previous years' Capital Budgets, that have been delayed, may be carry forward, according to the priorities of the administration for spending in the new plan. These funds are the unspent allocations from the prior years' approved CIP plan that could not be allocated within the prior year because the timeframe for completion is greater than one year.

Source: City of Memphis Capital Improvement Program, 2018-2022 Fiscal Years.

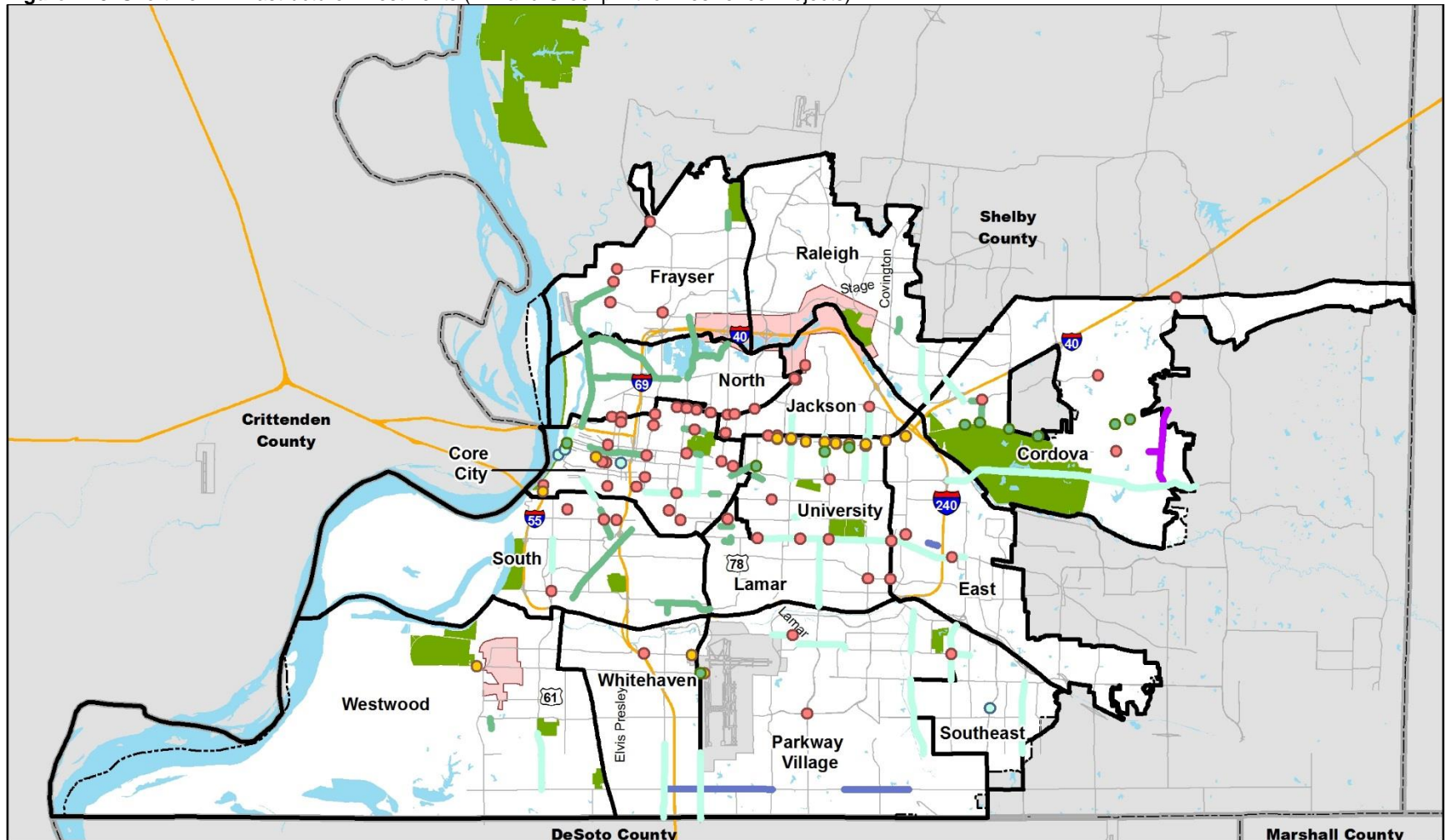
For the purposes of this analysis, it was not possible to map the projects included in the CIP. However, the Memphis MPO maps the projects included in the Transportation Improvement Program (TIP) and Long Range Regional Transportation Plan (RTP). As described above, the TIP is short-range plan that lists each transportation project planned within a four-year timeframe. The TIP provides an overview of how transportation revenues will be invested between FY 2017 and FY 2020 by the state and local agencies that build, operate, and maintain highway, street and public transit systems. Most of the transportation projects in the City of Memphis' CIP are included in the TIP. The RTP is a planning document that assesses the current and projected future demand on the region's transportation system and establishes a fiscally constrained plan of action to guide the development of transportation projects for the next 25 years.

**Figure IX-3** provides a map of TIP projects located within Memphis. The map also includes the Greenprint for Resilience projects located in the city. **Figure IX-4** provides a map of the RTP projects located in the city. **Figures IX-5 through IX-8** summarize the TIP and RTP allocations by Planning District and project category.

In the short term (FY 2017-22), the TIP shows the most investment occurring in University, Parkway Village, Core City, and Cordova. Most of the TIP funding is for bridge or bridge maintenance (including a series of projects on Sam Cooper Boulevard in University), road resurfacing or enhancement, and bicycle/pedestrian projects. Note that many of the road resurfacing or enhancement projects also include bicycle or pedestrian (complete streets) enhancements.

In the longer term (through 2040), the RTP shows half of all investment occurring in Parkway Village (in the industrial areas around the airport). Core City, Westwood, Cordova, and East are also each expected to receive more than \$100 million. The largest project categories are road widening, reconfiguration, or interchange improvements, followed by new roadways or interchanges.

**Figure IX-3. Short-Term Infrastructure Investments (TIP and Greenprint for Resilience Projects)**



**Short-Term Infrastructure Investments (TIP and Greenprint for Resilience Projects)**

**Project Category**

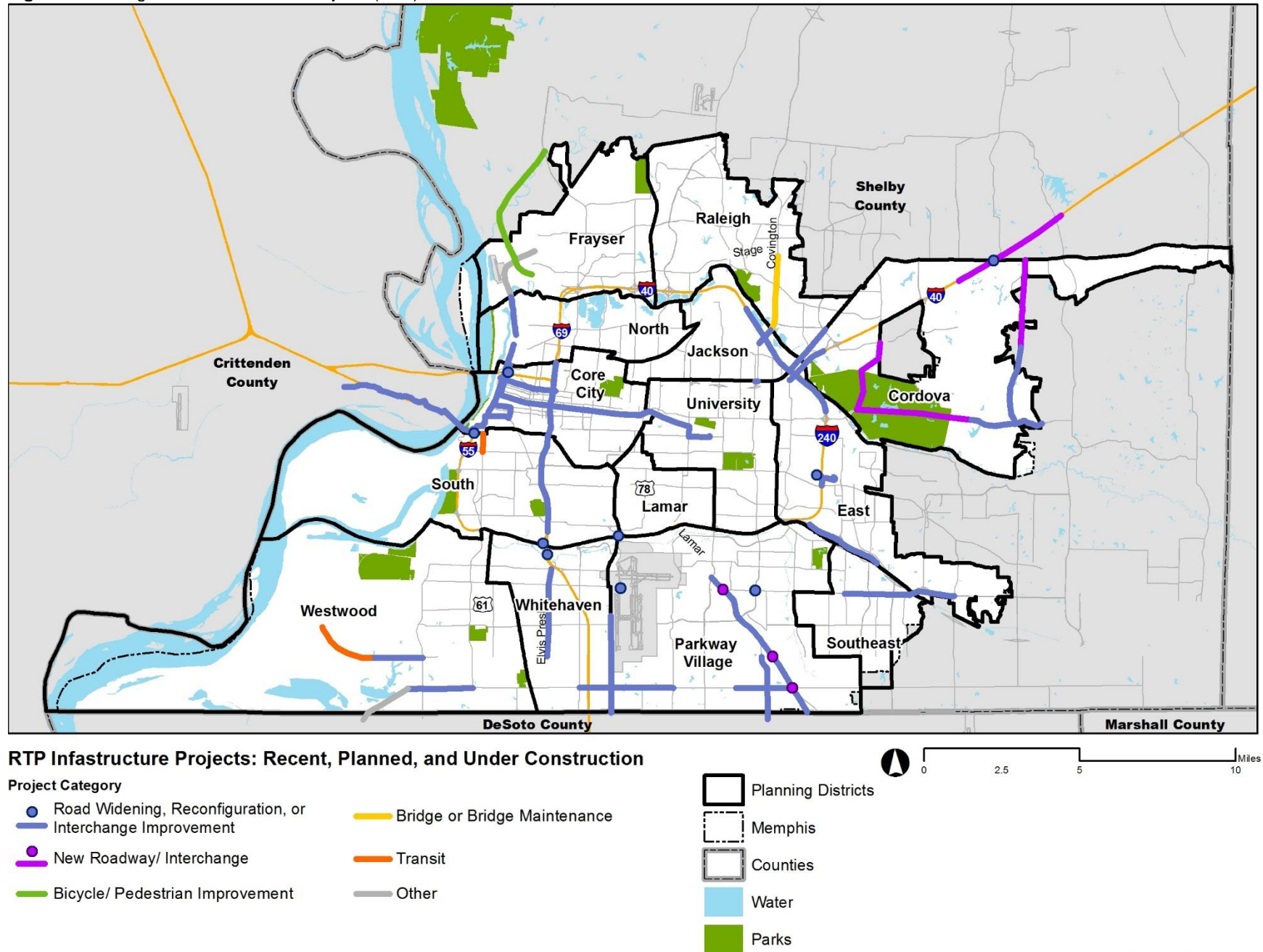
- Road Resurfacing or Enhancement
- Bicycle/Pedestrian Improvement
- Bridge or Bridge Maintenance
- Signalization
- Road Widening, Reconfiguration, or Interchange Improvement
- New Roadway/ Interchange
- Greenprint for Resilience Projects

- Planning Districts
- Memphis
- Counties
- Water
- Parks



Note: Some projects listed are included in both RTP and TIP. Dollar figures from RTP and TIP should not be added together.  
 Sources: Memphis Regional Transportation Plan, 2017; Transportation Improvement Program, 2017; Strategic Economics, 2017.

**Figure IX-4. Long-Term Infrastructure Projects (RTP)**



Note: Some projects listed are included in both RTP and TIP. Dollar figures from RTP and TIP should not be added together.  
 Sources: Memphis Regional Transportation Plan, 2017; Transportation Improvement Program, 2017; Strategic Economics, 2017.

**Figure IX-5.** Transportation Improvement Program (TIP) Investment in Memphis by Planning District, 2017-2020

<b>Planning District</b>	<b>Investment</b>	<b>% of Total Investment</b>
University	\$224,373,491	31.5%
Parkway Village	\$103,206,061	14.5%
Core City	\$102,798,346	14.4%
Cordova	\$75,465,340	10.6%
Whitehaven	\$53,978,660	7.6%
North	\$42,145,262	5.9%
Frayser	\$27,550,642	3.9%
East	\$23,962,395	3.4%
Southeast	\$20,933,953	2.9%
Westwood	\$16,949,690	2.4%
Lamar	\$11,226,910	1.6%
South	\$6,360,931	0.9%
Jackson	\$3,168,826	0.4%
Raleigh	\$1,040,722	0.1%
<b>Total</b>	<b>\$713,161,230</b>	<b>100.0%</b>

Note: Some projects are included in both the TIP and TIP. Dollar figures from the TIP and RTP should not be added together.  
Sources: Memphis MPO, Transportation Improvement Program; Strategic Economics, 2017.

**Figure IX-6.** TIP Investment in Memphis by Project Category, 2017-2020

<b>Project Category</b>	<b>Investment</b>	<b>% of Total Investment</b>
Bridge or Bridge Maintenance	\$259,076,200	43.5%
Road Resurfacing or Enhancement*	\$137,884,584	23.1%
Bicycle/Pedestrian Improvement	\$120,301,971	20.2%
Road Widening, Reconfiguration, or Interchange Improvement	\$44,142,150	7.4%
Signalization	\$22,709,550	3.8%
New Roadway/Interchange	\$11,959,500	2.0%
<b>Total**</b>	<b>\$596,073,955</b>	<b>100.0%</b>

\*Many of these projects also include bicycle and pedestrian improvements.

\*\*Includes several projects that are not categorized.

Note: Some projects are included in both the TIP and TIP. Dollar figures from the TIP and RTP should not be added together.

Sources: Memphis MPO, Long Range Regional Transportation Plan; Strategic Economics, 2017.

**Figure IX-7.** Long Range Regional Transportation Plan (RTP) Investment in Memphis by Planning District, 2020-2040

<b>Planning District</b>	<b>Investment</b>	<b>% of Total Investment</b>
Parkway Village	\$791,524,021	50.7%
Core City	\$137,382,951	8.8%
Westwood	\$117,453,419	7.5%
Cordova	\$112,374,691	7.2%
East	\$109,919,052	7.0%
South	\$86,981,373	5.6%
Whitehaven	\$69,542,349	4.5%
Frayser	\$67,852,300	4.3%
Raleigh	\$33,661,350	2.2%
North	\$20,160,400	1.3%
Jackson	\$7,267,200	0.5%
Southeast	\$6,496,010	0.4%
University	\$1,609,391	0.1%
Lamar	\$0	0.0%
<b>Total</b>	<b>\$1,562,224,506</b>	<b>100.0%</b>

Note: Some projects are included in both the TIP and TIP. Dollar figures from the TIP and RTP should not be added together.

Sources: Memphis MPO, Long Range Regional Transportation Plan; Strategic Economics, 2017.

**Figure IX-8.** RTP Investment in Memphis by Project Category, 2020-2040

<b>Project Category</b>	<b>Total Investment</b>	<b>Pct. Total Investment</b>
Road Widening, Reconfiguration, or Interchange Improvement	\$1,200,270,527	70.6%
New Roadway/Interchange	\$463,965,067	27.3%
Bridge or Bridge Maintenance	\$33,938,000	2.0%
Other	\$3,811,441	0.2%
Transit	\$1,163,172	0.1%
Bicycle/Pedestrian Improvement*	\$0	0.0%
<b>Total</b>	<b>\$1,699,336,765</b>	<b>100.0%</b>

\*Includes three projects; costs not listed.

Note: Some projects are included in both the TIP and TIP. Dollar figures from the TIP and RTP should not be added together.

Sources: Memphis MPO, Long Range Regional Transportation Plan; Strategic Economics, 2017.